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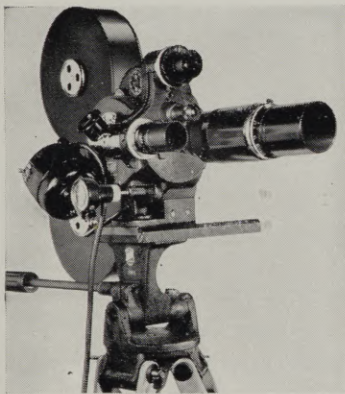
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The Front Cover

On the front cover this month
are Warner Baxter and Arleen
Whelan as they are seen in Twen-
tieth-Fox's "Kidnapped." It was
for his work in this subject as di-
rector of photography that Gregg
Toland, A.S.C., was awarded the
honors in the Hollywood Reporter
poll for May. Arthur Arling and
Eddie Fitzgerald were the opera-
tive cameramen and Eddie Garvin
and Robert Gough the assistants.
The subject was directed by Alfred
Werker.



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Just One Camera Problem After Another Created by Speedy Sonja

Director of Photography on "My Lucky Star" Describes
How Various and Varied Major Difficulties Have
Been Surmounted by Ingenuity of Crew So That
Spotlights Could Follow Skater, Cameras
Follow Beams and Ice Be Protected

By JOHN J. MESCALL, A.S.C.

*Director of Photography on "My Lucky Star," Sonja Henie's
Twentieth Century-Fox Picture*

IT TAKES new subject matter to develop new techniques in the art of cinematography, and in the case of Sonja Henie and her ice ballets necessity was the mother of invention.

Her present Twentieth Century-Fox picture, "My Lucky Star," is the fourth Miss Henie has made, and the second on which I have had the opportunity to work with Director Roy Del Ruth.

Her first two pictures dumped new lighting and camera problems in Hollywood's lap, and the suddenness with which they appeared made it hard to meet their demands immediately. It was not until the third picture, "Happy Landing," were we able to profit by the trial and error in the first two and devise new methods to meet new exigencies.

The huge sheet of ice which is the

rink on which Sonja skates, measuring approximately 100 by 200 feet, was our first lighting problem. As far as the cameras are concerned it might just as well be a huge mirror.

We had to begin by cutting down the overhead lighting as much as possible because the terrific amount of reflection from the ice causes that background to burn up and to throw too much additional light on our subjects.

All Sidelight

It also had the tendency to melt the ice, thus providing the production department with a problem of expensive delays.

Overhead lighting has now been eliminated altogether. Instead, everything is lighted from the side, the beams cutting from the feet to the tops of the heads.

In some cases where a portion of the light hits the ice, that is easily goboed (blanked) off. The amount of indirect lighting which the ice gets is more than sufficient for photographic purposes.

There is one light, however, which does hit the ice directly, and the necessity for which was the cause of two other inventions. This is the spotlight which follows Sonja's movements and spots a halo of light on the ice in which she performs her various gyrations.

The problem that confronted us on "Happy Landing" was to get a spot that could be handled from a distance and yet be bright enough to show up against the white ice. This was accomplished by Twentieth Century-Fox's chief engineer, Walter Strohm, who built an arc light with two projecting arms. These arms held two telescopic lenses which could focus and intensify the light.

Even with this advance, we still found that it lost a great deal of intensity when Sonja skated too far away. This led to the invention of a cable car running on tracks placed on the ceiling of the stage.

The car platform holds two men: one to operate the light and the other to operate the windlass which propels the car from one end of the stage to the other in pursuit of Sonja.

Mobile Camera Technique

With these advances in the lighting question we were able to perfect a mobile camera technique throughout the entire skating ballet sequences. In "My Lucky Star" we have brought it to its highest point to date.

Heretofore, the use of the conventional camera trucks, dollies and booms had produced handicaps. Dolly tracks could not be laid on the ice, nor could rubber truck tires be wheeled across it. They would both leave marks or freeze to the



Sonja Henie, at work in Twentieth-Fox's "My Lucky Star," with John Mescall, A.S.C., director of photography on that subject.

ice. The camera boom could be used to a certain extent, but it cannot move fast enough nor get away to a quick enough start.

Skating is not at all like dancing. The former has so much more speed and movement, and to photograph it well the camera must have a corresponding amount of mobility.

Instead of the ordinary camera truck, we built a sled with ski runners. This sled is large enough to hold camera, lights and two or three men, as the lights must follow with the camera. By means of a long armed handle at the back it is propelled by grips who wear cleats on their shoes to give them a quick getaway.

We find that the sled not only can move faster than a truck or dolly but also can start quicker.

The crowning achievement in this line, in my opinion, is our contraption which can follow Sonja at any speed as she circles the entire rink. This consists of a center pin frozen into the ice in the center of the rink.

From this pivot extends a wooden arm, 38 feet long, to which are attached sleds of various sizes to carry cameras, lights and men.

Lights Travel Fast

With this arrangement, we can describe a rapid circle around the rink, covering a diameter of as high as 76 feet. One of our lights used to spot Sonja is on the extreme end of the radius, and by clocking it we found that it describes a complete circle in six seconds, which means that it travels 45 miles an hour.

The camera in its position travels at the rate of 30 miles an hour, while Sonja, in her relative position, whizzes around at 40 miles an hour. There is none of the conventional camera equipment which could help us to photograph at this rate of speed on a sound stage.

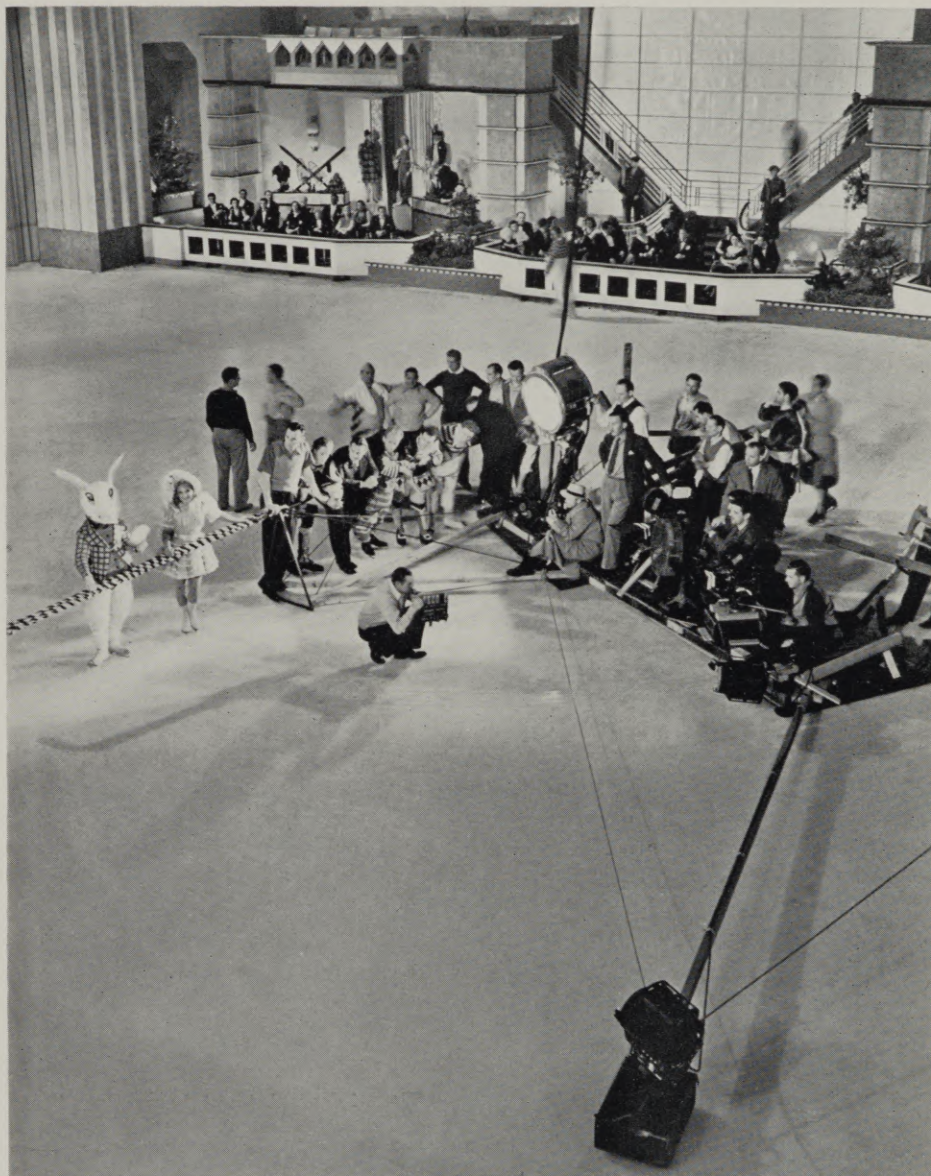
Besides its circular movement we have worked it so that the center pin can be pulled at any given moment, and the whole contraption hauled back or pushed forward when Sonja changes her course. Even at the speed we go it can be stopped or started quickly because of the cleats the grips wear on their shoes.

Skating plays havoc with focus when it comes to the matter of hitting exact marks. We had some trouble with this on the last picture, which meant that we needed more takes than usual until proper distances were achieved. Now, on "My Lucky Star," we have even overcome that.

Finding the Camera

The grips have a camera finder on the sled, and in their pushing and pulling work they help to keep Sonja framed. When it happens that Sonja is a foot or two off of hitting her marks, they are thus enabled to bring the sled to the same comparative distance from the camera marks. The saving in time and effort this has made is remarkable.

Even Sonja's problem of finding the



The movies go round and round . . . This camera setup for photographing Sonja Henie in her Alice In Wonderland ballet for her Twentieth Century-Fox picture, "My Lucky Star," works on a pivot set in the ice and follows her in a circle around the rink. The outer lamp, 38 feet from the center, travels at the rate of 40 miles an hour. Seated near the lamp is Dance Director Harry Losee, while beside him stands John J. Mescall, A. S. C., director of photography. Director Roy Del Ruth is the man in the overcoat behind the camera.

camera after a fast spin has been taken care of. All vision is blotted out for her when she goes into one of those fast whirls or spins, and it used to be sheer hit or miss guesswork on her part to come to a sudden stop facing the camera. We used to keep on shooting these spins until, by accident, she finished facing the right way.

Then we tried several types of beacon lights to attract her attention, but they made no difference to her blurred vision at these times and only gave us extra light which we didn't want. It was when I tried a small red neon light beside the camera that she was able to hit her position correctly every time.

Sonja says that at these times, with everything whirling rapidly before her eyes, the only single thing she can pick out is the neon light, and can therefore always gauge her stops facing it.

With all of these innovations we have, for the first time, been able to accomplish absolute complete mobility of the camera instead of having to depend on a series of cuts of long shots, medium shots and close-ups.

Camera Moving in Fact

At no time in her skating numbers is our camera stationary. We follow everything backward, forward, sideways, in circles, and even in concentric and expanding circles. Only once did it seem that we would be stumped, but that eventually worked itself out.

In the Alice in Wonderland ballet for "My Lucky Star," the biggest number in the picture, Director Roy Del Ruth wanted to show Sonja going through and later coming out of the magic mirror. This meant that we would have to see her reflection in it, have her step

(Continued on Page 271)

Dr. Carter Outlines History of Search for Permanent Photograph

By DR. ROBERT W. CARTER

of the Taylor-Sloane Corporation of New York

In two parts—Part I

IT must be stated at the outset that within the limits of a short article it is difficult to convey many of the important phases of the development in motion picture projection from metal film.

We hope, however, shortly to give not only a written presentation of the principles and possibilities involved in metal film, but we trust that we will be able to give a demonstration of the quality of image by light reflection from metal film, the efficiency of sound, the possibilities of color, and the various tests for long life and permanence that we have established over the period of seven years.

In the present article we will endeavor to give a brief sketch of the evolution of metal film, starting with the first development of images on metal, the discovery of light-sensitive salts of silver, and the gradual abandonment of metal for paper and cellulose bases.

We will then trace the rise and development of non-ferrous metals, particularly aluminum alloys, the perfection of mirrors and lenses for reflection, the technique and processes of developing photographic images on metallic surfaces, and the final consummation of a permanent photographic image on a flexible metal ribbon.

We hope also to point out some of the obvious advantages of a perfected metal film as against the present cellulose acetate and cellulose nitrate film.

Story Ranges Back

I suppose we are all acquainted with the fact that as far back as 1777 Scheele, the Swedish chemist, had investigated the properties of silver chloride in their relation to light. We also know that Thomas Wedgwood read a paper before the Royal Institution entitled "An Account of a Method of Copying Painting on Glass and Making Profiles by the Agency of Light upon Nitrate of Silver."

We cite these two very early workers to show that the silver salts were a subject of considerable investigation prior to the first photograph on metal.

In 1814 Niepce came over to England and drew the attention of the Royal Society to his discovery, which was a picture in bitumen. There is no record of what medium Niepce developed his picture on. In 1824 Daguerre began

his celebrated experiments on what we now know as the Daguerreotype.

Daguerre's process depended entirely upon a metal base. His original paper shows that a sheet of copper was selected and plated with a film of pure silver. This was highly polished and then exposed to the vapor of iodine. After exposure the image was developed by the vapor of mercury.

To Daguerre belongs the glory of the discovery that an image could be produced in a silver-coated metal plate. Most authorities on the history of photography admit that the daguerreotype print was superior in definition and beauty to all other photographs taken on other materials. We all know the disadvantages that caused the process to become obsolete.

The picture was laterally inverted; it was difficult to see the image at all angles of reflection; and there did not seem to be any rapid method of making copies from the original.

We might point out in passing that more daguerreotype prints have survived the ravages of time than any other type of print that has come down to us since the discovery of photography.

It is probably an old story to most of you how Wedgwood, Fox Talbot, Sir John Herschel, Mungo Ponton and other illustrious workers advanced silver gelatine emulsions on paper, how metal was gradually eliminated, and in the year 1850 the daguerreotype process had been superseded by the wetplate process, gelatine chloride process, and metal as a base became almost exclusively confined to engraving, etching and printing processes.

We should mention the so-called tinteotype, which is really not a photograph on metal in the sense that a daguerreotype is, but is a ferrotype plate with a silver emulsion on the surface of a black varnished coating. These prints are fugitive and are not to be confused with the daguerreotype for beauty or permanence.

Before dealing exclusively with our own developments which commenced in the year 1910, we would like to consider two recent developments, one by the Siemen-Halske Company in Germany and the other a very recent development by Dr. Paul Merica.

We have very few details about the latter process, except that pictures are made on sheets of duralumin about one-sixteenth of an inch thick which contains an oxide coating of silver salts sensitive to light. This statement is dated March 18, 1938, and is given by the Associated Press.

The Siemen-Halske development dates back to 1932 and is a process in which the surface of aluminum and aluminum alloys is treated by an anodic bath. This modified surface forms with silver and other sensitive salts an aluminum compound that is sensitive to light.

We might say in reference to this that we have created an anodic surface on aluminum and aluminum alloys as far back as 1912 and have never been able to make a compound of silver on any other sensitive medium that had anything more than academic value.

Seek Indestructible

Our approach to the development of photographs on metal was mainly to secure an image that would be positively permanent, fadeless, and indestructible. Many years were devoted to seeking a method of making images on paper that we could be assured were permanent. Exhaustive studies were carried out on silver salts, platinum, carbon tissue, and other methods of positive printing that claimed permanence.

We gave allowance for hasty development or insufficient fixing or washing of the print and carried out our experiments and tests with the most rigid controls possible.

The results of our investigation established the fact that while one or two prints by any of the methods mentioned would be unchanged at the end of three years, other prints of the same group made under identical conditions and with the same controls would be stained, faded or discolored.

We were of the opinion that this was largely due to the chemical changes in the paper base. We, however, critically examined the negatives by Brady of Abraham Lincoln. The silver gelatine emulsion was suspended upon glass and appeared to be in good preservation.

The middle tones indicated disintegration and led us to the conviction that for a permanent photograph it was necessary to change both the base and

the medium used in securing the photographic print.

In 1912 we commenced our research on a suitable metal as a base for a permanent photograph. We will not weary you with the details about the rejection of the usual methods given in textbooks and technical journals.

Back to Daguerreotype

We might state that the daguerreotype process gave up the only existing method of making photographic images on metal. We suppose that some of our readers have made a daguerreotype print and know the difficulties in doing so. The sensitive silver surface is softer and more difficult to handle than the wet gelatine emulsion on a cellulose film.

The slightest touch ruins the print. We eliminated the idea of creating an image by the vapor of any chemical because, while it might be changeless as far as light is concerned, it is so fragile because of its soft, powdery com-

position that even though this is protected with lacquer or other coatings, it is still not a permanent image from this point of view.

It became obvious as time went on that a photograph to be permanent would have to be in the metal, in the sense that a coating or metal by electro-deposition attaches itself intimately to the surface to which it is applied.

This audience knows that it is possible to take a sheet of copper or other metal and plate it with gold or silver and strip on to the plated surface a carbon tissue print or a silver print made by any standard method. The permanence of this print depends on the medium used to cement the print to the metallic surface.

It is obvious that any substratum we know about today would hardly be considered a base for a permanent photograph.

Twenty Years' Test

In 1914 we succeeded in the creation of chemically inert oxide surfaces on a sheet of metal. The metal, an alloy of the non-ferrous type, rapidly yielded,

when exposed to certain chemicals, a smooth, white, homogeneous surface. We found that this surface was not only changeless in exposure to light and air, but that it was compatible with silver emulsions and other light-sensitive mediums later developed.

We have exhaustively tested this surface for over twenty years. It is fadeless, changeless, and permanent. It must be remembered that this surface is an oxide in the metal itself and is not something painted, brushed or sprayed upon the metal.

In the year 1915 we commenced the development of photographic images on the permanent white surface that we had created. The work was difficult and arduous because of lack of precedent. The literature on photography on metal is meager and unsatisfactory.

We found after eighteen months that the sensitive salts of silver and platinum could readily be adopted, and excellent results were obtained by certain combinations of ammonium bichromate mordants and certain dyes.

(To Be Concluded)

Just One Camera Problem After Another

(Continued from Page 269)

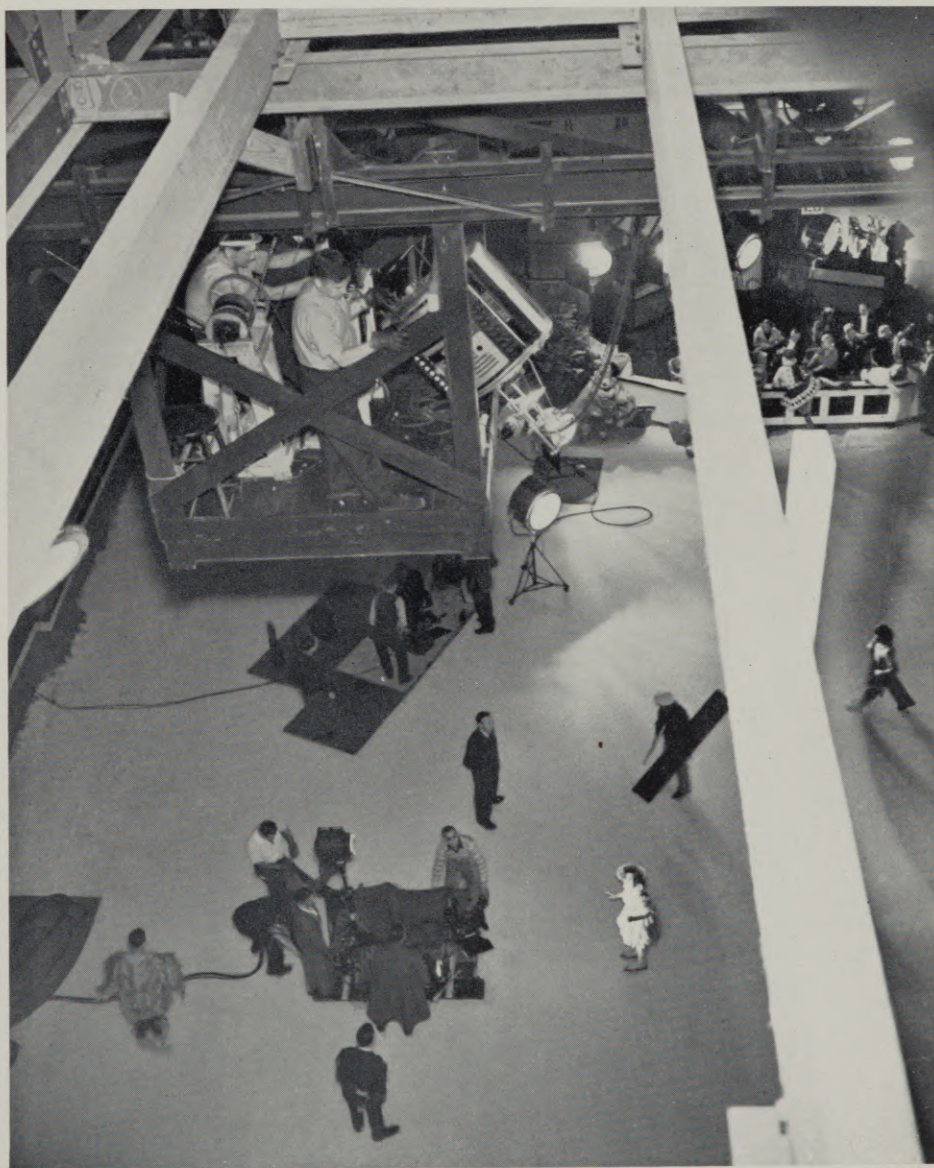
through into another set and have the camera follow her.

To do this with ordinary trick processes such as double exposure, stop camera or process, we would have to have a stationary camera. We were almost in despair when I happened to run across an old book, published in 1860, which gave a description of an ancient stage trick with a mirror which accomplished just this purpose. By reproducing it with modern variations, we were able to photograph the entire sequence without once stopping the camera.

There is no doubt that the advent of Sonja Henie in pictures has given rise to the invention and development of lighting and camera technique which did not exist before for the simple reason that there was no call for them. Many of them are applicable not only to ice skating but can be adapted to general use.

We do not claim to have reached the zenith of possibilities, but we have gone a long way in even the short space of one year.

Johnny Mescall, A.S.C., describes how Sonja Henie was able to make a quick stop exactly facing the camera following a fast whirl. Ordinary lights only added to the blur that came with the speed until Johnny tried a neon light. That penetrated the haze and the skater was able exactly to time her stop. At the top of the picture is a cable car on tracks carrying two men to enable illumination to trail the speeding skater around the huge skating rink. On the floor is seen the camera on ski runners. Jack Woods photographed the still.



General Electric Solves Needs of Professional in Light Meters

So Declares Executive of That Company in Discussing Recent Article by Victor Milner, A.S.C., Which Suggested Cameramen's Requirements Await Inventor—Adds No Technical Problem in Securing Meter A.S.C. Man Wants

By F. C. BOBIER,

Meter Division, General Electric Company, Schenectady, N. Y.

THE writer was somewhat surprised on reading the article by Victor Milner, A.S.C., in the June issue of *The American Cinematographer*, entitled "Professional's Requirements in Light Meters Awaiting Inventor." The requirements set down by Mr. Milner almost parallel the description of the General Electric exposure meter which appeared in the March issue of the *American Cinematographer*.

Perhaps Mr. Milner has not read this article, or perhaps the writer did not go into sufficient detail to bring out the features which are of most interest to the professional cinematographer, but the individual requirements will be taken up here in detail.

Mr. Milner's first point is that the scanning angle should be between 25 and 30 degrees. The General Electric exposure meter essentially meets this requirement, inasmuch as the true angle is not the same in this design of meter as it would appear if measured geometrically.

Less Than 30 Degrees

While the measured horizontal angle is approximately 60 degrees, the design of the meter is such that the meter has what is known as a peaked response curve. In other words, a light source directly in front of the exposure meter exerts much more influence on the pointer deflection than one at the edge of the included scene.

Thus the scanning angle effectively producing a meter reading is much smaller than the mechanical angle at which light strikes the cell or some portion of it.

This is the reason for the statement in the March article that "careful consideration has been given to limiting the light striking the cell so that correct exposure is obtained for either still or movie cameras."

The mechanical angle, in a vertical direction, is about 30 degrees, and with the response characteristics mentioned the effective angle is much less than this. It is much more important to have a small vertical angle than horizontal angle, since the usual troublesome fac-

tors are either glare from the ground or bright light from the sky.

Two years of use of this meter before it went into production, coupled with a year's experience with thousands of them in use, has thoroughly convinced us that about the right compromise has been selected.

Second Requirement Met

The meter has worked so well with cine cameras that it seems unnecessary to put out a special model for movie work. On the other hand, if this is not the case the narrowing of the horizontal angle is a simple matter.

The second requirement, that "the truly professional meter should have an adequate hood or sunshade capable of shielding the cell from unwanted glare from skies, expanses of sea, beach, or sunlit walls in exterior scenes, and from backlight and other disturbing rays in interiors," is fully met by the present General Electric exposure meter.

The writer's own words in the March article were as follows: "The sliding hood on the meter has been designed to give the best possible directional qualities. Careful consideration has been given to limiting the light striking the cell so that correct exposure is obtained for either still or movie cameras."

"Strong overhead light from the sky,

"Engineering" in Schools

The Academy Research Council's new book, "Motion Picture Sound Engineering," has been adopted by the Los Angeles City Board of Education as an official text book for use in the city high schools and approved for purchase by the city and branch libraries.

Several hundred copies of the book already are in use by the Frank Wiggins Trade School in downtown Los Angeles, and it is expected other city schools will begin to use the book.

During the month since the first issuance of the book the Research Council has received a great number of favorable comments on it, all bearing out the advance reports on the book as the finest publication of its kind.

unwanted side lights and strong reflected lights such as from snow, all are excluded sufficiently so that minimum of judgment is needed for taking difficult shots. Usually, it is only necessary to point the instrument at a scene, read it, set the camera, and take the picture."

The third requirement mentioned by Mr. Milner is of "high sensitivity." The General Electric meter is extremely sensitive, but here there is room for argument as to whether or not it is sensitive enough. We would very much appreciate Mr. Milner's opinion as to how much more sensitive a meter should be than the present General Electric instrument.

Can Increase Sensitivity

It would not be difficult to increase the sensitivity of our present meter seven to ten times, at a moderate increase in price. It would be unnecessary to change any of the external design features except an additional multiplier shutter would be needed in bright outdoor conditions.

The fourth requirement is for "a meter which can be used interchangeably either for reflection readings as with present types or for direct readings as is the case with the bulky instrument universally used with the Technicolor process."

This is fully met by the present General Electric exposure meter. The instrument is so designed that the directional hood may be removed. When this is done, the other part of the exposure meter becomes a foot-candle meter or light meter for measuring direct light on any surface or subject. It is this feature which enables the photographer to use the exposure meter in such extremely low light intensity.

Summing up, we believe that the present General Electric exposure meter will meet the requirements as laid down by Mr. Milner in his article. However, if higher sensitivity is necessary, or a narrower horizontal angle is necessary, there is no problem involved in furnishing such a meter on comparatively short notice—provided there is sufficient market for it.

MOST WIDELY USED

ONLY one raw-film factor matters much to the motion picture public. But that factor, photographic quality, is the most important of all. . . . Reason enough why Eastman Super X has become the cameraman's stand-by... the world's most widely used motion picture negative medium. Eastman Kodak Company, Rochester, N. Y. (J. E. Brulatour, Inc., Distributors, Fort Lee, Chicago, Hollywood.)

EASTMAN *SUPER X*
PANCHROMATIC NEGATIVE

Toland with 20th's "Kidnapped"

Awarded Camera Honors for May

GREGG TOLAND, A.S.C., for his work on 20th-Fox's "Kidnapped" won photographic honors for May in the national reviewers' poll as recorded in the Hollywood Reporter. This is a monthly event in which the world's motion picture correspondents domiciled in Hollywood assay the productions released during the current month. Each nominates his choice for best and second and third best.

On the camera Peverell Marley, A.S.C., was a good second for his photographic work on "Alexander's Ragtime Band," which incidentally was voted the best picture of the month. Joseph Ruttenberg, A.S.C., was third for his on "Three Comrades."

Toland, it will be recalled, was one of the three chosen for nominees in the Academy's photographic classification for 1937. In the April issue of this magazine there was a brief review of his work in pictures covering a period now of more than seventeen years, which began incidentally when he was sixteen years old.

In the same story it was pointed out that although the cinematographer had spent all but four years in a business way with Samuel Goldwyn that ad-

herence to one employer had not detracted from the quality of his work by reason of his failure to rub elbows and ideas with men and groups of men in other studios.

At the time the technicians of the Academy were voting on the three photographic nominees Toland was away from his home studio at Goldwyn's and making "Kidnapped" at Twentieth-Fox. Here as is customary when away from his home lot, in accordance with the terms of his contract, he was surrounded by the members of his own crew. So in that very major respect he was quite at home. These included the operative cameraman, assistant cameraman, gaffer, best boy and grip.

Leans to Low Key

When the photographic choice of the reviewers was asked as to his own reaction in a mental review of the picture following the decision of the writers he said he recalled no especial factor in a camera way. With the exception of two exteriors the subject was made inside.

The lighting of the picture followed his general custom of using a low key unless some reason out of the ordinary indicated to the contrary. In spite of his preference for a low key there is no

hesitation on his part in using lamps when in his judgment there is photographic occasion.

There was a time like this in "Dead End," the Goldwyn subject which last year attracted the attention of the Academy's technicians. On the building of the main set in the staging of that subject \$62,000 was expended, requiring many electricians and pulling 8000 amperes on nearly every scene.

Toland is progressive and at all times alert to take advantage of ideas that are new. During the last month there has been installed at the Goldwyn studio—it was being assembled on the 22d of June



Gregg Toland

Scene from Twentieth-Fox's "Kidnapped," in which Gregg Toland, A.S.C., (behind the camera), as director of photography was given the photographic bouquet for May. In another chair is the director, Alfred Werker, and standing before the camera is Freddie Bartholomew.



—a hydraulically operated tripod. Incidentally it moves fast as well. The hydraulic lift is in four sections equally divided as to height.

By its use the cinematographer attains the same effect as at present is secured by a low tripod and a high one, with the avoidance of the added annoyance of shifting the camera from one to the other and then back again. With the new device, which in the present instance is a Mole-Richardson tripod hydraulically mounted, the lens may be lifted from the low point of 20 inches to an extreme height of 11 feet 6 inches.

There is a great future for the hydraulic principle in studios, declares Toland. Now being prepared for his use at the Goldwyn studio is a hydraulic parallel that will afford a platform 20 feet from the stage floor—and of course actually the size is controlled only by the limitations of the stage.

Ace Newsreeler Gives Light on How He Films News of the World

By **ARIEL VARGES, A.S.C.**,
Cameraman on News of the Day

TWENTY-THREE years ago I stood beneath a broiling Mexican sun grinding an old English "Moi," recording the flight of Pancho Villa. At my feet was a Graflex, for in those days we doubled in brass. It was my job to shoot stills for Hearst newspapers and "moview" for the youthful International Newsreel.

I was a cocky kid of twenty-four, then on my first assignment. Since then, I worked in 47 of the world's 52 nations pursuing (an appropriate verb) what I smilingly refer to as my career, so perhaps I have some qualifications for giving advice.

Like many another newcomer in those early days, we shot by the old trial and error system and hoped for the best. In the years that followed, I've often looked back and wondered how my negative ever got by as well as it did.

True, we were getting constant and ever-widening experience, but experience alone—even 23 years of it—is not enough to meet the strict standards of negative quality that is demanded of us today.

Exposure Problem Vital

Luckily, newsreel editors and newsreel audiences were not so critical then. If we were there when important events happened even a blurred or shadowy ghost record of the scene would get us by—provided no competitor popped up



Ariel Vargas, A.S.C., consults his Weston in the brilliant high-altitude sky. Of course, he knows through years of experience what his exposure is going to be, but maybe he wants to learn if the meter does, too. He admits, though, that in case of doubt he follows the meter.

with a crisp, properly-exposed record of the same scene!

Today, any cameraman taking chances of that kind not only invites trouble but deserves it. The growing use of faster film and faster lenses, with demands for pictures in light varying from tunnel-like obscurity in indoor halls and courtrooms to the brilliant reflection found on a snow-capped mountain where skiers are showing their newest tricks, makes

the exposure problem more and more vital.

With old-time films and lenses, for example, overexposure was generally the least of our worries. Today, with the new super-speed films that have just come on the market, it is perhaps the easiest mistake to make for those who try to use their experience and eye-judgment to judge light conditions.

Personally, I have long since come to regard an exposure meter as just as much a part of my standard equipment as a tripod and changing bag, and this same attitude is increasingly general among news cameramen the world over.

I have had my Weston with me under all sorts of adverse conditions in Ethiopia, in Japan, Palestine and in Spain—as well as here in the United States—and it has never misled me yet, even when the light levels it recorded seemed contrary to what I might have guessed.

Japan to Ethiopia

When the Ethiopian trouble flared, for example, I was in Japan on high Mount Fujiama where the altitude is 12,000 feet and the light is unusually bright compared to lower altitudes. Twenty-five days later I set up my tripod in the dusty hot railway station at Jibuti, in French Somaliland, and 48 hours after was clattering off to the high cool plateau on which lay Addis Ababa.

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At the left Ariel Vargas, A.S.C., ace newsreeler, is seen on location in China. At the right he reveals the face of worry that goes with that of a man who hunts a whale and fails to spot even a flying fish. And it just happens he is plenty hungry at the time.

Shooting Technicolor in the Air Opens New Field for Air Pictures

By CHARLES A. MARSHALL, A.S.C.

I THINK I know how Alexander the Great would have felt if somebody had showed him a new world to conquer! For a good deal more than a decade I have been specializing in aerial cinematography.

In common with the scant handful of my fellows who man Hollywood's flying cameras I had been wondering if, after the flying thrills we lensed for such epics as "Hell's Angels," "Hell Divers," "Dawn Patrol," "West Point of the Air," "Test Pilot" and others, there could still remain anything genuinely new in the way of aerial scenes to film.

Then Paramount assigned me to do the aerial camerawork on its cavalcade of aviation, "Men With Wings." It is the first aerial spectacle to be filmed in natural color.

And that fact opens up new vistas for aerial cinematography.

Color adds a lot to ordinary scenes filmed on the ground and in the studio. But it adds vastly more to scenes filmed in the air. The only way you can possibly describe it is to say that color gives new life to aerial scenes.

Consider, for instance, the difference between scenes of air battles of the World War filmed in black-and-white and in color. Regardless of how thrilling the action may be, you know beforehand what you'll see on the black-and-white screen.

Realism Indeed

Against a darkish-gray filtered sky with strong white clouds, along will come a flight of "German" planes. They appear black on the screen. From another angle, in comes a flight of "Allied" planes, which photograph white.

And there is your picture: gray sky, white clouds, and black planes and white planes chasing each other about the sky. The action may be thrilling, but it is still just a picture; those out front don't feel as though they were in the sky with the players.

Now imagine the same action as we filmed it in Technicolor. Your scene opens with a blue sky filled with white, puffy clouds. (And the makers of color travelogues have long ago found that audiences will sit up and take notice

at any good color shot dominated by blue sky and pictorial, white clouds.)

Into that picture of blue and white comes the "German" squadron. Like Richthofen's real wartime squadron, these ships are painted a wild assortment of colors—red—green—red ships with green noses and orange wings—blue ships with red trimmings and yellow wings—every imaginable color combination that can shout "This is the flying circus—beware!"

Colorful Picture

From the other direction approach the "Allied" planes. Some are silver, with the tricolor cocarde on wings and tricolor stripes on tail. Others are camouflaged in shifty patterns of brown and green, lightened with their identifying cocardes, squadron and individual emblems, and so on.

Now mix these colorful ingredients well, as such pilots as Paul Mantz, Frank Clarke, Frank Tomick and World War "ace" Director Billy Wellman can do, and you'll have a mighty colorful picture.

But you'll have more than that. The fact of having the scene in color adds an entirely new note of reality. The color gives a separation of planes, an illusion of height and actuality none of us has been able to achieve in monochrome. The phrase is overworked, but color really lends a semi-stereoscopic effect to scenes filmed in the air.

Some Problem

Getting these scenes is something of a problem. In black-and-white aerial cinematography we can use an Akeley, a Bell and Howell or a Mitchell camera, any of which is quite large enough to give a lot of wind resistance when you have to operate it from an open plane. But in this present case we naturally had to employ the still larger and heavier Technicolor camera.

To minimize the wind resisting area, special magazines holding three 500-foot rolls of negative in Technicolor's usual side-by-side arrangement were made. To further aid the cameraman, special hand-grips were fixed to these magazines.

But even so, these big cameras presented so much surface to the wind that after every shot I felt as though I had had a workout with a champion wrestler. At some angles—especially when the camera was tilted up steeply—the equipment became almost unmanageable. The pressure of the slip-stream was stronger



Charles Marshall, A.S.C., (left) discusses a shot with Pilot Paul Mantz, Director William A. Wellman and Technicolor Cinematographer Wilfred Cline, A. S. C., camera mounted on wings.

The Technicolor camera in a fixed mount on one of the pursuit planes used in filming Paramount's "Men With Wings." Photos by Hal McAlpin.



than any force I could exert on the tilt-handle.

Try Windshield—Once

One of the first things we tried to remedy this was building a special, big windshield in front of the camera cockpit. We only tried it once! On the first test hop we learned that the oversized windscreen disturbed the flow of air so greatly that it made the tail and control surfaces "flutter," vibrating until they were in danger of breaking away.

Definitely, it is not a nice experience to find this happening when your plane is flying but a few hundred feet from the ground! Pilot Mantz and I discovered it while we were too low to use our parachutes, and quite high enough so we knew the ship would dig itself a deep hole in crashing.

The only thing to do was to get rid of that windshield. I still have some scars to remind me of what a messy job it is to tear away solidly anchored sheets of pyralin with your bare hands. After that we got along without windshields for the camera!

We used the cameras in a variety of mounts, free and fixed. For the shots in which I had to "follow" action we used the regular Paramount aerial mount, in which the camera can be traversed around the cockpit on a sliding track, and panned and tilted on its special friction tilthead.

For some of the fixed-mount shots we mounted the camera on the upper wing of a plane, while in others we placed it on a special mounting on the fuselage, near the tail.

In using a Technicolor camera on a

wing mount it is particularly necessary to be sure of having a ship with ample lift and power, due to the way the big box disturbs the flow of air around the wing, and consequently the lifting power. An ordinary Bell and Howell or Mitchell will sometimes kill two thirds of the lift of a wing; the larger color camera can reduce the lift even more.

Lighting an aerial color shot is not

greatly different from a black-and-white scene. A three-quarter front side light is best. This will give the necessary modeling in cloud backgrounds, and at the same time will give a desirably even lighting on the planes being photographed.

Lighting in the Air

As far as the planes themselves are concerned, even a flat front lighting is not bad, if it cannot be avoided, for there are always wing shadows, and the like, to break up the otherwise uninteresting flatness.

Clouds are as important in a color shot as in a monochrome one. Without a few clouds in the background, any type of aerial scene seems flatter and there is less sense of movement. There is, however, one difference in a color shot in which you can show the ground beneath, or a mountain in the background. The separation added by color to some extent helps to serve the purpose ordinarily served by the clouds.

Lab at Disadvantage

The exposure technique of aerial Technicoloring is mastered easily enough. There is one difficulty in this connection, of course. In Technicolor, the laboratory puts great reliance upon photometer readings and ample photographic tests. In aerial work, the very nature of the work minimizes the value of such tests. Both photometric readings and photographic tests of Technicolor's "lily" color-chart have to be made on the ground, before or after the flight, under conditions which must be much different from those of the actual scene. Also, the usual scene tests have to be made either before or after the actual take, and con-

(Continued on Page 283)



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BARNEY MCGILL and J. O. TAYLOR shot the speedway classic at Indianapolis for 20th . . . RUDOLPH MATE goes to Universal for one picture . . . Nominations for the May Preview Poll award for best photography for the month are JOSEPH RUTTENBERG for *Three Comrades*, OLIVER MARSH for *The Toy Wife*, PEVERELL MARLEY for *Alexander's Ragtime Band*, LEO TOVER for *Cocoanut Grove*, SOL POLITO and GEORGE BARNES for *Gold Diggers of Paris*, GEORGE FOLSEY for *Hold That Kiss*, JOHN MESCALL for *Josette*, GREGG TOLAND for *Kidnapped*, CHARLES ROSHER for *White Banners* and LESTER WHITE for *Yellow Jack* . . . Through the co-operation of JOHN ARNOLD Lou Kolb of M-G-M effects department has invented a new fog machine . . . When 20th Century-Fox distributed the recent golf tournament prizes HARRY DAVIS was handed a five-dollar coupon book for a lot of Davis bread. Harry is an apartment dweller and eats all of his meals out, so I guess one of his coworkers will get the prize . . . GREGG TOLAND wins the Hollywood Reporter's Preview Poll of May for the photography of 20th Century's *Kidnapped* . . . JOE RUTTENBERG came through with a neat 105 in the Warner Golf Tournament . . . JOHN MESCALL going in for 16mm color in a big way . . .

HARRY HALLENBERGER will photograph Paramount's *Illegal Traffic* . . . DAN CLARK returns after a successful trip to Callender, Ont., where he again photographed the quintuplets for 20th's picture *Five of a Kind* . . . JAMES HOWE does another picture for Wanger . . . R. O. BINGER is in the east doing production and process shots for Edward Small's picture *The Duke of West Point* . . . GREGG TOLAND has invented a gadget for his key light. It is a chain actuated arrangement that changes the density while standing on the ground . . . Metro is now doing the processing for GREGG's picture . . . VERN WALKER promises an article on the principle of professional process shots with illustrations. Now that's what I call a break for those who read the amateur section of this paper . . . LEN GALEZIO's hobby is collecting stamps . . . SID WAGNER is on location in Boystown, Nebraska, as director of photography on MGM's picture *Boystown*. HAROLD LIPSTEIN is photographing the second unit and JACKSON ROSE has an interesting and independent assignment with the same gang. JACKSON is a combination director and photographer. He is 'newsreeling' the town that is 'run' by boys—a sort of March of Time idea which will show little episodes here and there depicting the lives of these youthful executives and their method of self government. When JACKSON returns we will prevail upon him to tell of his experiences in his own words . . . Just finished reading the 1938 revised edition of *The American Cinematographer's Handbook*, by JACKSON ROSE. It is complete and right up to the minute and is deserving of a place in every photographer's hip pocket . . . NICK MUSURACA

WHAT ABOUT ME?

By
BEE GEE

had his contract extended at RKO . . . JOHN FULTON, after eight years at Universal doing process photography, is devoting a lot of time to his hobby, which is aviation theory and practice. JOHN has had about five hundred hours in the air, owns his own "ship" and believes in the air as a safe means of travel as compared to our highways when competing with the Sunday driver . . . Who is going to photograph *Gone With The Wind*? . . . JOHN MESCALL, ERNEST PALMER and EDWARD CRONJAGER are to report to GEORGE CAVE at Technicolor for training some time this month.

The Press Says:

White Banners, Warner Bros.—"Credits are praiseworthy, including an eloquent camera by Charles Rosher" and, "Charles Rosher's photography is superlative."

Alexander's Ragtime Band, 20th—"Peverell Marley's camera gives brilliant account of his talent," and "... and photography by Peverell Marley is the tops."

Josette, 20th—"John Mescall handled the camera ably," and "John Mescall's photography is excellent."

Two Gun Justice—"Jack Greenhalgh's photography is tops" and "Jack Greenhalgh has ably lensed the production."

You and Me, Paramount—"Outstanding is the photography of Charles Lang," and "Charles Lang photographed impressively."

Mysterious Mr. Moto, 20th—"Virgil Miller's photography is top-notch," and "Bows for Virgil Miller for his photography."

Air Devils, Universal—"Harry Neumann's photography fits in with the general average of the picture."

Toy Wife, M-G-M—"Oliver Marsh's photography is tops."

Wives Under Suspicion, Universal—"George Robinson's camera work is standard," and "George Robinson's photography is in good taste."

Speed To Burn, 20th—"Edward Snyder's photography is excellent."

Three Blind Mice, 20th—"Ernest Palmer's photography has sparkle."

Blockade, Wanger—"Outstanding is the photography of Rudy Mate."

Highway Patrol, Columbia—"Lucien Ballard's photography is excellent throughout."

Mystery House, Warners—"L. William O'Connell's photography is okeh."

Cowboy from Brooklyn, Warners—"Photography well handled by Arthur Edeson" and "Photography is tops."

Keep Smiling, 20th—"Edward Cronjager's photography is tops."

Border G-Man, RKO—"Excellent photography by Joseph August."

My Bill, Warner Bros.—"Photography by Sid Hickox is excellent."

Romance of the Limberlost, Monogram—"Gilbert Warrenton's photography is up to his usual high standard."

Woman Against Woman, M-G-M—"Impressively photographed by Ray June" and "Ray June's photography is first class."

Reformatory, Col.—"James Brown's photography is OK" and "James Brown's photography is tops."

Pride of the West, Par.—"Russell Harlan has handled the lens with a master's touch" and "Russell Harlan's photography is tops."

When Were You Born, Warners—"William O'Connell's photography was first class throughout."

City Streets, Col.—"Photography is tops" (Alan Siegler).

Prison Farm, Para.—"Ablly photographed" (Harry Fischbeck).

Young Fugitives, Universal—"The photography is excellent throughout and is deserving of a more ambitious project." George Robinson photographed.

Danger on the Air, (Universal)—The Hollywood Reporter says the photography is tops.

Always Goodbye, 20th—No press comment.

Algiers, Wanger-UA—"and the camera work of James Howe were great contributions and will stand out in its success," and "Photography by James Howe is excellent."

Passport Husband, 20th—"Edward Snyder's photography is expert."

Crime Ring, RKO—"Jack MacKenzie has done an excellent job on photography."

Fast Company, MGM—"Camera work by Clyde DeVinna was good."

Meridian 7-1212, 20th—No press comment.

Who's Who on Production

RKO

Mother Cary's Chickens—J. Roy Hunt.
Carefree—Robert DeGrasse.
I'm from the City—Frank Redman.
Breaking the Ice—Russell Metty.
Affairs of Annabel—Russell Metty.
Smashing the Rackets—Nick Musuraca.
Painted Desert—Harry Wild.
Gunga Din—Joseph August.
Room Service—J. Roy Hunt.

UNITED ARTISTS

The Young in Heart—Leon Shamroy.
The Lady and the Cowboy—Gregg Toland.

UNIVERSAL

Letter of Introduction—Karl Freund.
State Prison—Harry Neumann.
Little Tough Guy—Elwood Bredell.
Prison Walls—Harry Neumann.
Red Barry—Jerry Ash.
Road to Reno—George Robinson.
The Missing Guest—Milton Krasner.
Youth Takes a Fling—Rudolph Mate.
That Certain Age—Joe Valentine.

WARNER BROS.

Valley of the Giants—Sol Polito.
Girls on Probation—Arthur Todd.
Unlawful—Sid Hickok.
Three Girls on Broadway—Louis Wm. O'Connell.
Head Over Heels—Charles Rosher.
The Sisters—Tony Gaudio.
Devil's Island—George Barnes.
Angeles with Dirty Faces—Sol Polito.

MONOGRAM

The Barefoot Boy—Gilbert Warrenton.

PARAMOUNT

Bulldog Drummond in Africa—Harry Fischbeck.
Boolco—Carl Berger.
Spawn of the North—Charles Lang.
Mysterious Rider—Russell Harlan.
Give Me a Sailor—Victor Milner.
Men with Wings—Duke Greene.
If I Were King—Theodore Sparkull.
Zaza—Charles Lang.
Artists and Models Abroad—Ted Tetzlaff.
Touchdown Army—Henry Sharpe.
Return of the Fox—Russell Harlan.
Arkansas Traveler—Leo Tover.
Paris Honeymoon—Karl Struss.

HAL ROACH

Meet the Missus—Art Lloyd.
There Goes My Heart—Norbert Brodine.

20TH CENTURY FOX

My Lucky Star—John Mescall.
Suez—Peeverell Marley.
Ellis Island—Edward Cronjager.
Meridian 7-1212—Virgil Miller.
Straight, Place and Show—Ernest Palmer.
Meet the Girls—Edward Snyder.
Winter Garden—Virgil Miller.
Mr. Moto in Egypt—Virgil Miller.
Down to Earth—Lucien Andriot.
Hold That Co-Ed—Robert Planck.
Safety in Numbers—Charles Clarke.
Sport Series No. 2—Edward Snyder.

COLUMBIA

You Can't Take It with You—Joseph Walker.
Outside the Law—Henry Freulich.
Wild Bill Hickok—Ben Kline.

The Gladiator—George Schneiderman.
Lady Lawyer—Allen Siegler.
Wings of Doom—Lucien Ballard.
West of Santa Fe—Ben Kline.

GRAND NATIONAL

Utah Trail—Francis Corby.

MGM

Too Hot to Handle—Hal Rosson.
The Great Waltz—Joseph Ruttenberg.
Fast Company—John Seitz.
Love Finds Andy Hardy—Len Smith.
Boystown—Sid Wagner.
The Chaser—Charles Lawton, Jr.
Just a Jiffy—Art Lloyd.
Sweethearts—Oliver Marsh.
It's Now or Never—Ray June.

Coaxial Cable Demonstration by Engineers Proves Great Success

The officers of the Pacific Coast Section of the Society of Motion Picture Engineers were hosts of the S.M.P.E., the American Society of Cinematographers and others identified with the film industry at the Filmmate Theatre on the evening of June 29. The occasion was the projection of a reel of motion pictures under the title of "The Transmission of Motion Pictures Over a Coaxial Cable" and the reading of a paper describing it by Dr. L. F. Brown of Electrical Research. The author of the paper was H. E. Ives of Bell Telephone Laboratories of New York.

For those members and guests especially interested in the latest laboratory technique and development Ralph B. Atkinson read a paper prepared by S. E. Sheppard and R. C. Houck of the Eastman Kodak Company. It was titled "The Influence of pH on Washing Films After Processing."

The program stated the major paper and demonstration were prepared and arranged chiefly because of the subject's outstanding importance to engineers and technicians and added officers of the sec-

tion were particularly happy to be able to present them at this time.

The demonstration was of rare interest, particularly the quality of the photography secured following translation at the Philadelphia terminal of the electrical impulses back to photographic images. Television as a factor in modern life gained vastly increased momentum in the minds of those who were unaware of the significance contained in the expression "coaxial cable."

The motion pictures transmitted over the coaxial cable consisted in part of a standard Paramount newsreel as well as animated sections illustrating the techniques and equipment used in scanning the prints at the New York end of the cable and in translating the electrical impulses back to photographic images at the Philadelphia terminal.

At New York a special scanning disc capable of giving a 240-line scanning with a standard speed of 24 frames a second was used in converting photographic images on the film to electrical impulses which were transmitted over the coaxial cable.

Although this is considerably below the proposed 441 lines and 60 interlaced frames a second, the care taken in assuring accurate transmission of all the frequency components so that correct amplitude and phase is preserved gives the excellent results shown in the demonstration films.

The shape of the scanned picture was chosen as 7:6. This method of scanning calls for a top frequency of 806 k.c. By suitable modulation and elimination of upper side bands the frequency range from 0 to 806 k.c. is transmitted as 144 k.c. to 950 k.c. over the cable.

At the Philadelphia terminal after suitable demodulation and rejection of upper side bands the original frequency range of 0 to 806 k.c. is reproduced. The electric currents corresponding to this frequency range and varying in amplitude according to the transmission of the original picture elements are impressed on the modulating plates of a special five-foot cathode ray tube.

At the same time the cathode ray beam is caused to traverse the whole rectangular area of 7 inches by 8 inches in the fluorescent field of the tube in

(Continued on Page 282)

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CABLE: 'CINECAMERA'

A. S. C. Men as Blackburn Guests Enjoy "Highlights and Shadows"

EDWARD O. BLACKBURN, A.S.C., was host at the June gettogether of the American Society of Cinematographers, held on the evening of the 27th on the recording stage of Electrical Research adjoining General Service Studios. The first part of the evening was devoted to screening three pictures, which was followed by refreshments and the customary gettogether.

The pictures shown were United States Steel's abbreviated form of "Steel" in Technicolor, photographed as a feature last fall by Charles P. Boyle, A.S.C., for the Roland Reed Productions; "Isle of Pingo Pongo," a Technicolor comedy cartoon short produced by Schlesinger for Warners, and "Highlights and Shadows," an industrial of Kodak Park and its works produced by the Eastman Kodak Company.

At the close of the screen program Emcee Blackburn introduced "the youngest member of my staff." As he did so he signaled to Jules E. Brulatour, A.S.C. The veteran film man spoke briefly and feelingly as he looked from one face to another and referred to the many with whom for so many years there had been such cordial relations.

"I hope it will be my privilege to be with you for many more of these meetings to come," he said in conclusion.

Program to Order

The screen program was one made to order for the house it was designed to entertain. The steel industrial subject was an ideal one in its classification. It was a picturemaker's picture. It had everything that enters into the making. In each department quality stood out. As an example, Edwin C. Hill was the commentator, and presumably he wrote the comment, because in conception and delivery, including timing, there was no flaw. In reducing the spectacular subject from five reels to less the cutting stood out. The fine photography of Charlie Boyle was much commented on.

"The Isle of Pingo Pongo" was a delightful conceit and was a credit to its producers and distributors.

The two subjects constituted a good preparation for viewing "Highlights and Shadows," the bringing of the interiors of the vast Kodak Park works out into the sunlight and exposing to the world how Eastman product is made to click. The picture was photographed and produced by J. Sibley Watson Jr., A.S.C., in cooperation with the Research Laboratories of the Eastman Company in Rochester.

Mass and Detail

The accompanying music was by the Symphony Orchestra of the Eastman School of Music under the direction of Dr. Howard Hanson. The orchestral score was by Howard Hanson, Burrill Phillips, Bernard Rogers and Wayne Barlow.

The subject was a fine example of the value of interweaving scenes of mass and detail, or perhaps detail and mass—of showing, for instance, the assembling of a camera part by part and the steady extension of the work until it comprehended rows upon rows of cameras and the boxing and trucking, the locking of the freight car doors and the turning of the locomotive's wheels starting the product to the four corners of the world.

The part played by machinery in making possible the production of great quantities of output was pressed home, but sight never was lost of the fundamental principle that in conjunction with the best machinery brains could devise there must be men and women of unusual intelligence and highly skilled in the manipulations of the tools and chemicals provided.

Goes Into Detail

The picture went into detail as to the making of lenses, of film and all the major elements of the photographic industry. It will make clear to many persons many things that were mysteries



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heretofore—and especially does this apply in the manufacture of film.

Film that is not a mere 8mm., 16mm., or 35mm. wide but five feet wide and running that width unbroken for a couple of thousand feet may be a bit out of the ken of the average filmer—yet it is a most casual fact in Kodak Park.

There is bound to be a wide field of usefulness for entertainment as well as for instruction in "Highlights and Shadows." As a motion picture it need only be said it fully meets the expectations of those who know what the Eastman Company has achieved in system and efficiency in the course of a half century of research and endeavor.

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Engineers Are Hosts

(Continued from Page 280)

one twenty-fourth of a second, the beam sweeping back and forth over the face of the tube 5760 times a second or 240 times for each frame.

The time of each sweep across the tube corresponds exactly to the time that the spot of light from the scanning lens traverses the film. The especially long tube was chosen so that over the comparatively small area of 7 inches by 8 inches there would be practically no distortion.

The images appearing at the rate of 24 frames a second on the surface of the cathode ray tube in Philadelphia were rephotographed on motion picture negative and developed as an ordinary print. The sound track which accompanies the demonstration reel was transmitted over an ordinary program channel in the same coaxial cable and recorded at Philadelphia.

Weston Puts Out Stainless Darkroom Thermometer

To meet critical needs for accurate temperature measurement of photographic solutions, the Weston Electrical Instrument Corporation has developed an entirely new type of thermometer.

The new thermometer has a dial-and-pointer scale easily read with "on the dot" accuracy even under dim darkroom safelights. The entire casing is of stainless steel construction, with an all-metal temperature element sealed within a rugged stainless steel stem. Thus, it is practically unbreakable in service and corrosion-proof to photographic chemicals.

Location of the dial in a horizontal position at the top of the stem, well out of the solutions being tested, makes the unit particularly convenient for use in developing tanks. Dial markings from 0 to 180°F. are spaced for easy readability on a metal scale plate.



A. E. Wright

Wright with Bell & Howell as Sales-Publicity Chief

Bell & Howell Company announces the appointment of A. E. Wright as manager of sales promotion and publicity, effective June 1.

The new-comer has been active in Chicago advertising agency and radio circles for nineteen years. Agencies he has served as contact and copy executive include Lord & Thomas, Erwin Wasey & Co., Henri, Hurst & McDonald, Potts-Turnbull Company and Reincke, Ellis, Younggreen & Finn.

Following a year with the Columbia Broadcasting System as inter-zone sales representative prior to the establishment of its Detroit office, Wright served two years as radio director for Freitag Advertising Agency.

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Shooting Color in Air

(Continued from Page 277)

sequently either before or after the ships actually fly through the scene.

This places the laboratory at a considerable disadvantage, and also puts the cinematographer definitely on his mettle. It calls for close cooperation between cinematographer and laboratory if the results are to be uniform and satisfactory.

One aspect of Technicolor camerawork in the air which seems strange to a man accustomed to monochrome technique is the absence of filtering. With the rare exception of the blue filter used for artificial night effects, no filters are used.

Both photography and weather conditions must therefore be absolutely right if the results are to be as desired. As more of this work is done, I would not be surprised to find interesting results in color air shots coming from the use of aesculin and other filters for eliminating haze, and pola-screens to render blue skies more intense; but at present no filters are used, and the results have been most pleasing.

Spectacular Shot

Certainly, one scene we filmed ranks as one of the most spectacular I have ever photographed. The camera ship flies along level with a formation of "German" planes. From several thousand feet above a squadron of "Allied" ships power-dive into the formation, and the two flights break up into a dog-fight.


In making this shot, the camera ship was only a few hundred feet from the lower formation. The upper formation had to dive very accurately, passing

slightly behind the lower ships, and naturally planning their dive very accurately to avoid collisions. The climax of the scene comes as the lead ship of the diving formation, flown by Frank Clarke, comes out of its dive in a loop, coming up between the "German" ships and the camera ship. On the screen it is extremely spectacular. Actually making the shot, I was more than ordinarily glad that Clarke, flying this attacking ship, was one of the world's foremost precision fliers. At the bottom of his loop, the camera ship was hidden from his view by his own upper wings. Coming up into the loop the camera ship was still hidden from him, this time by the belly of his ship. In other words, he had to fly that loop blind—and squeeze

through less than 160 feet between the "German" ship and the camera ship! One tiny miscalculation and someone—probably a chap named Marshall—would be in a bad way!

Thanks to Clark's skill, the shot was made without a hitch, and the audience will have a new thrill, greatly enhanced by color. But I'll admit I was glad when I got down from that flight without having to use my parachute!

A large American motion picture producer plans to establish distribution throughout South Africa, with major houses in Johannesburg, Cape Town, Durban, Port Elizabeth, Pretoria, East London, and other cities throughout the country.



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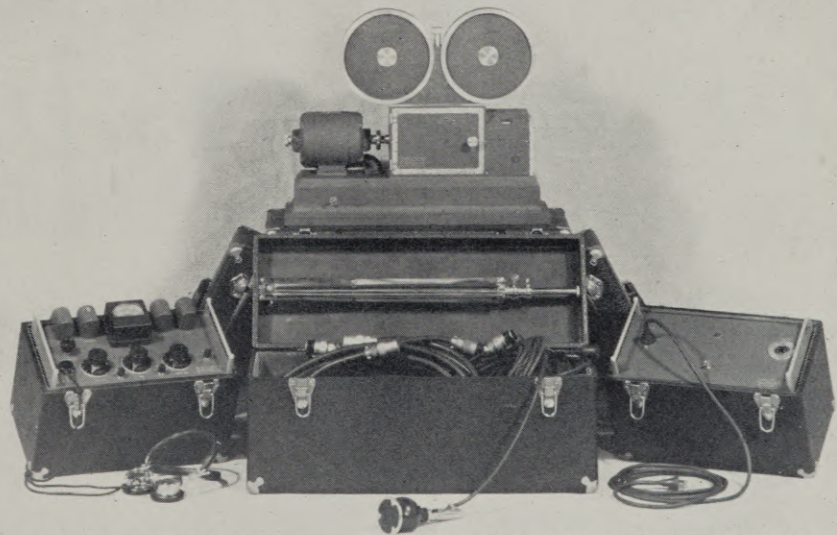


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Varges Talks of Meters

(Continued from Page 275)

The number of miles between these strange and widely distant locales (Japan and Ethiopia) is no greater than the difference in climatic and atmospheric conditions I encountered in making pictures.

In Japan I had bright light; in Ethiopia I encountered extremely brilliant light owing to the altitude and proximity to the equator.

The secret of operating a photo-electric meter is to interpret the light

intensity from the point of negative quality. This is accomplished only after a few tests. Perhaps the most difficult part is to learn to follow the meter reading, and disregard the human element of thinking your exposure should read F8 whereas the meter reads F12.5.

Once you've worked in the lowlands, and then fly to a high plateau where the light appears normal but actually is 75 per cent stronger photographically, you'll soon find out what I mean. In mountainous regions I have found the meter reading to be absolutely correct.

Meets Franco

Strangely enough, with cameras a universal hobby, it is frequently the little exposure meter which exacts the greatest interest. When I left Ethiopia I was routed to Palestine, then settled down in Paris for a much needed rest when orders came to proceed into Spain.

A few weeks later two European cameramen and myself were grinding away along the Nationalist front when a cavalcade of motorcars drove up and out stepped General Franco. After taking the salutes of his staff the general looked over to where I was busily making pictures.

Eager to grasp the first opportunity I had had of getting some exceptionally good closeups of the gentleman, I broke out the Weston to take a reading. Now, whenever possible, I use a meter from two points of vantage: (1) a general

reading for normal exposure, then (2) I walk to say within 10 feet of my subject and accept a balanced reading for the quality of negative desired.

Engrossed only in what I was doing, I blandly walked smack through a cordon of soldiers who didn't seem to know whether to relax their guard and club the daring foreigner or just let him live. I returned to the camera, made my shots and found the general very much interested in the whole procedure.

He smiled, showed all sides of his soldierly profile and then came over to inquire who I was and what I had done when I walked forward with my little gadget. I explained the meter to him and found him to be quite a camera fan keenly interested in pictures as a hobby.

(The fact that he maintains an elaborate Press-Picture department with which he dispenses Nationalist propaganda is another story.)

Meter Useful in Spain

This chance meeting and our brief chat about the workings of a photo-electric exposure meter proved a most helpful entree and very useful during my stay in Spain.

All of which reminds me of a photographer friend in Berlin. A hard-working little German, he seldom takes a day off. From dawn to exhaustion he thought only in terms of pictures. In desperation, the office sent him to Paris—paid his way—insisted that he take a vacation. On his return the staff was eager. "Did you have a good time?" "Oh yes." "What did you see?"

"Oh, Versailles, the Tower, the Seine—all fine photographic subjects," was the reply.

"Sure, sure," they agreed, and then queried hopefully, "but what did you do at night?"

"Oh, at night I had to expose twice as long."

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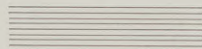
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The original B & H "what you see, you get" viewfinder is perpetuated in this new Model 141 in a refined form, incorporating an important new feature, "Projected Area." This viewfinder permits no change of field if your eye moves from the center of the eyepiece. It gives a greater magnification of the image. It sharply defines the edges of the field of view. Extraneous light is excluded, and elements are

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Filmo 141 employs the same lens mount as the professionally-versatile Filmo 70 Cameras, facilitating the interchange of lenses. Built-in B & H exposure calculator gives detailed coverage of every outdoor daylight photographic condition. Permanently correct alignment of mechanical and optical components is assured by the rugged die-cast aluminum-alloy housing. Modern in design, with inset panels of hard rubber in pin seal leather embossing and with chromium fittings, Filmo 141 is as attractive as it is efficient.

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Australian Amateurs Progressive

By GEORGE BLAISDELL

MOVIE NEWS, official organ of the Australian Amateur Cine Society, for May has reached the Cinematographer's sanctum. Edited by F. W. Pratt, the booklet consists of 12 5½ by 8¾ inch pages and four covers. It reflects credit on its makers, with its text pages of eight-point type and its reproduction of a full-page still picture exposed on location.

The picture was made while a troupe was filming the present picture of James

A. Sherlock, "Nation's Builders." There is a suspicion on the desk where this is being written that the grand prize winner of The American Cinematographer contest in 1937 already is "laying his pipes" to bring a first-class headache to other contenders throughout the world for the Cinematographer's 1938 award.

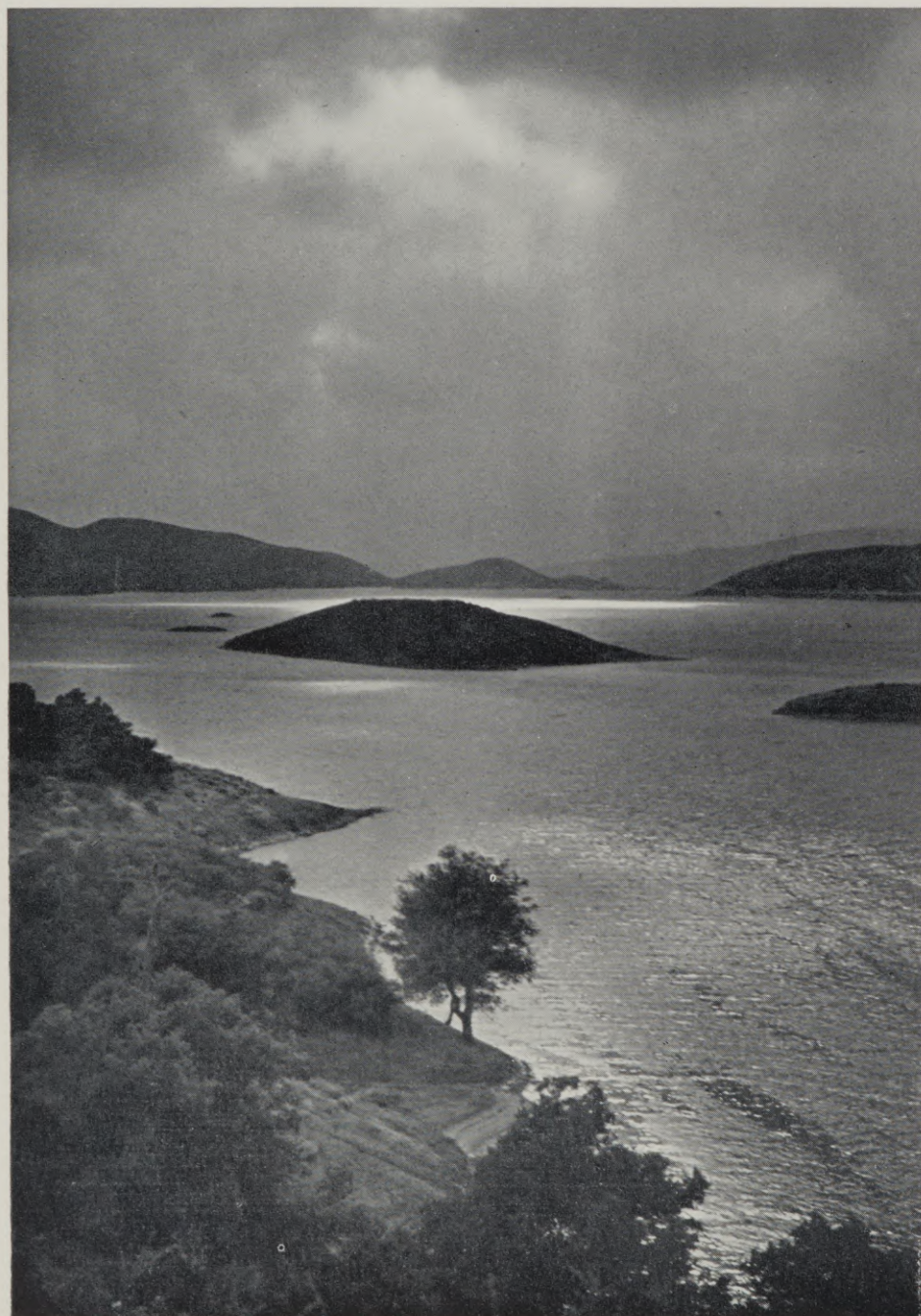
"Nation's Builders" to be a story of the first 150 years of Australia as a nation. The subject is in the top of the minds of the men and women who live

in the Great Island just now, for the 150th Anniversary Celebration has just drawn to a close.

As the editor of the Movie News intimates, "its closing left most of us with a wealth of film." But coming back to that Sherlock picture for 1938, as an indication of the care being expended on its making the historical sequences are being directed by Frank Brooks, who has undertaken much research to make sure the costumes, make-up and action are authentic.

In April members of the A. A. C. S. motored to Katoomba and Mount York to film Blaxland, Lawson and Wentworth on their journey over the Blue Mountains, and a realistic film of Australia's first successful exploration party resulted.

On Sunday, May 15, the same party went to Burratorang Valley to film



This is neither a shot out of Alaska, as was surmised by Frank Good, A.S.C. secretary, who was in that country within the year at the head of a Paramount camera crew, nor is it one out of Scotland as suggested by a photographic dealer. It is an afternoon exposure across Bouquet Canyon Reservoir, easily within a couple of score miles of Los Angeles.

The lake is a creation of the last half dozen years, designed to replace the body of water that was dissipated when the not so remote San Francisquito Dam went out—with the loss of several hundred lives and much property.

The spot is worthy the attention of camera addicts—both motion picture and still. Bouquet Canyon parallels Mint Canyon, main highway from Los Angeles to the Mojave Desert, a country rich in photographic material. To those residents of Los Angeles who may not be aware of this particular section's existence, its camera possibilities, as well as to the legion of tourists who may detour to the City of the Angels in the course of a visit to San Francisco's Exposition next year, we recommend the inclusion of this picturesque combination of desert and mountain in the itinerary.

The camera was hand held against a breeze that noticeably rippled the waters of the lake—and the more than gentle roar from which was weirdly and impressively audible in the otherwise silences of the desert hills.

Photographed by the editor. Photo finish by Pat Clark.

Hargraves, Tom, and Lister, discovering the first payable gold in Australia.

After the first discovery was filmed, it was hoped to shoot a scene showing other gold seekers arriving in period costumes.

"A trophy will be given for the best characterization of one of these early gold miners," states the Movie News. "Family parties are invited to this fancy dress picnic, whether they are in miner's costume or not, and will be most enthusiastically welcomed if they enter into the spirit of the day and come dressed for the part. Transport will be provided for costumed players."

Australia may be a long way from some communities esteemed by their inhabitants as being right in the center of things, but it is quite plain to one person at least that when it comes to making an amateur movie the Australians are asking no odds from any old town the world around.

That the members of the A. A. C. S. achieve things and go places is or should be easily understandable to one who has studied the craftsmanship of Mr. Sherlock, one of the vice presidents and the publicity officer of the society. No one gifted in picturemaking ways as is this prize winner can fail to be an inspiration to his fellows, to be an incentive that will spur to emulation, to surpass him in open competition.

Beyond question these Australians have a great organization. That may be sensed by those on the other side of the world. This last spring they have removed their quarters to larger and well-equipped rooms at Science House, Gloucester street, Sydney. Their meetings are held the first and third Mondays.

Australia is a motionpicturewise country. Figures released during the present month claim that the nearly seven million persons living on the island visit motion picture theaters practically once a week on an average. In such a comparatively thinly settled country it does not seem possible. But these are the figures.

The Movie News tells of the drive being made for members by President R. F. Scott and Secretary D. R. McDonald of the Queensland Amateur Cine Society.

For the contest that closes July 31 the decision will be based: For photography, 35; general interest, 30; editing, 25; special effects, 10. That is a working basis that must appeal to many who have puzzled over a schedule that would keep in the forefront the importance of the entertainment factor—its "general interest." Here photography and general interest rate 65 percent. And that sounds good.

The Victorian Amateur Cine Society was active through the spring. The April meeting was devoted to 9.5mm. films exclusively. Recently a half dozen carloads of members went to Hanging Rock, fifty miles from Melbourne, to make a club film, "Held to Ransom."

In the May Movie News also is a re-

port of a short address on "Editing and Titling" given by Mr. Sherlock at the current meeting of the A. A. C. S. As we say here in the states, editing and titling are "right down Sherlock's alley." In his approach to that subject or sub-

jects there is nothing of the amateur. He is full-fledged. So for the benefit of those amateurs who never overlook any genuine advice on means to improve their editing ability we are taking the liberty of reprinting the address.

Airman Catches Color Picture of Plane's Rainbow Circled Shadow

UNDER the title of "Spectre of the Brocken" Stith-Noble Corporation of Hollywood is assembling and duping and setting to sound a 1200-foot length 16mm. Kodachrome subject which so far as is known will contain a sequence a parallel to which was never before photographed, in color anyway.

That is the picture of a rainbow outlined in the form of a complete circle against a mass of white clouds—not in the orthodox semi-circular arched rainbow to which earthbound mortals are familiar.

Into that circle for a moment flashes the shadow of a Western Air Express plane, a phantom as weird as it is distinct and thrilling. It is a spectre within the grip of a spectrum, or another spectre if you will.

The plane is 11,000 feet above sea level, on the Los Angeles-Salt Lake run, elevated like that Brocken in the Harz Mountains to which the term owes its birth. The picture has had particular interest to Richard Stith, secretary of the Los Angeles Cinema Club, and a member of the company executing the consignment on the film.

Stith is a flier, with approximately three thousand hours to his credit. Not only is he interested in the subject from its photographic side, but in the fact that in his air experiences he has several times witnessed the Spectre of the Brocken. Never, however, has he witnessed it when he held a camera poised and ready to shoot. Nor has he ever before known of anyone else who has.

So in the present instance his congratulations went to Hugh Coburn not only for having his camera at hand but for his rare judgment in picking his quickly chosen exposure. There was no opportunity for the use of a light meter. It was a quick guess and a slam, for the Spectre is on and as promptly is off again.

The picture that will form the setting for "The Spectre of the Brocken" is a travelog exposed on the line of the Western Air Express, from San Diego south and Glacier National Park north.

When sound has been added to its fine color and excellent photography the subject will constitute a film of unusual quality.



Here is the airman's version of "The Spectre of the Brocken," in which he sees the shadow of his own plane rimmed by a circular rainbow. There was but a moment to grab his camera loaded with Kodachrome and secure several feet of it. Herewith is an enlargement from 16mm.

No Vacation More Appealing Than Mountain Pack Trip with Camera

So Declares Expert Visual Recreationist in Story Describing Making in Color in High Sierras of "Trail Song," 16mm. Subject Viewed by Hundred Thousand Persons — Now Producing Film for Showing at Golden Gate Fair

By **CLIFFORD A. NELSON**

*Supervisor Visual Recreation
San Francisco Recreation Commission*

Illustrations including those on page layout are from enlargements of Mr. Nelson's national park 16mm. films

WE often read of spectacular attempts to scale very difficult peaks. If the members of the climbing party survive the ordeal they "contribute to science"; if they don't survive they contribute to the long sad list of those who sacrificed their lives because "mountain is mightier than man."

Of course it is not on these mountains that the writer will encourage the amateur cinematographer to carry a collection of cine and still cameras, a battery of lenses, films and tripods. Instead, we have innumerable possibilities to enjoyably photograph scenic wonders that are close to our own backyards.

Nowhere will you see the majestic operations of nature more clearly revealed than beside the frailest, most gentle and peaceful things. Nearly all the park is a profound solitude. Yet it is full of charming company, full of God's thoughts, a place of peace and safety amid the most exalted grandeur and eager enthusiastic action; a new song, a place of beginnings abounding in first lessons on life,

mountain-building, eternal, invincible, unbreakable order; with sermons in stones, storms, trees, flowers and animals of brimful humanity.—John Muir on Yosemite National Park.

In the opinion of this writer there is no trip within the limits of an average vacation period that is more appealing to a moderately rugged sportsman than a mountain pack trip.

Paradise Indeed

In most of the national parks the hiker can enjoy miles and miles of beautiful trails, where there are flowery valleys filled with giant trees; where great waterfalls plunging over precipitous cliffs frown on delicate fairy-like brooks; where the shy creatures of the forest seem to welcome the sight of a knapsack; where the dashing trout tempt the fisherman; where the gleaming stars seem to descend to join the evening campfire program, and where majestic peaks with their glaciers and gleaming snow banks make all other great things look small.

The horseback rider, even though he

be inexperienced with horses, will enjoy these wonders with the added comforts of convenient transportation over the rugged trails. Although it is possible to merely indicate a few suggestions in this article, the photographer has no end of opportunities to photograph beautiful pictures and to plan interesting continuities so that his motion pictures really tell a story.

It was with this last feature in mind that the writer was asked to present a description of how "The Trail Song" was produced. Therefore, this article will feature a procedure for telling the pack trip film story, and will also include a few fundamental suggestions for color photography in the mountains.

"Trail Song" Superb Picture

Although "The Trail Song" was considered an outstanding film by the Hollywood Motion Picture Forum and was very well received during its presentations to more than 100,000 San Francisco people during the last year, the writer is not satisfied that the picture is the best that can be attained, in spite of limitations.

We learn much by experience, and during my many presentations I am very conscious of the improvement that could be made on the next film.

For this reason I am combining the description of "The Trail Song" with the ideas for the new motion picture which is to be taken between July 15 and August 1 for showings at the Golden Gate Exposition. It will be one of the features of the Visual Recreation program, for which I am also preparing color motion pictures of various recreation subjects.

Responsibilities Many

Before going on with the description it might be well to inform the readers that on my mountain trips I am subject to even more irregularities and difficulties than the average amateur cinematographer on a vacation trip.

In the first place, the trip has always



been primarily an outing for about twenty boys. They are always "on the hop," and it would be unreasonable to exhaust their patience by interrupting their journey every time an opportunity to take pictures presents itself.

This, of course, makes the matter of anticipating a scenario rather difficult. As the leader of the party I have always been responsible, without the assistance of any counsellors, for all of the cooking, packing, first aid, etc. as well as for the photography.

Although the boys mean to help with the work as much as possible this responsibility leaves me with little time to sit down to plan "aesthetic compositions." Other irregularities that we encounter are storm conditions, delays with pack animals, etc.

Sometimes it is necessary for me to revise the entire picture scheme according to a new plan, even though a definite scenario and continuity had been anticipated before the trip was started.

I do not wish to give the impression that this or any other vacation trip would be full of difficulties and hardships; I merely mention these things to indicate it is quite possible to make the most of photographic opportunities on a pack trip, regardless of a few difficulties which might appear discouraging.

List Your Necessities

In planning a pack trip we first choose a place and outline an itinerary. The National Park booklets and the government topographic maps will be indispensable aids. Whether or not you will take pictures, don't be too ambitious and attempt to cover too much territory.

Remember that it is familiarity with what you see and not mileage that contributes to a general appreciation of the outing. I have heard many a friend mention that he made such and such a peak in so many minutes flat! So what?

Before leaving on a pack trip, we first write down a systematic list of all necessary food and equipment. The food is of prime importance. Without a well balanced diet your companions will develop bad dispositions and the pictures will most probably be doomed for over or under exposure or some other acute condition.

On a mountain pack or saddle trip the kayaks and knapsacks will contain foods that have a minimum amount of weight but yield the maximum amount of energy. Usually they are dried, canned and dehydrated foods that will not perish.

Although this article primarily is not a dissertation on foods, I might mention briefly a few sample camp meals that will "make better pictures."

Easy to Take

A breakfast consists of dried fruit, which may be stewed; a cereal or hot cakes, ham or bacon, hot chocolate or coffee. This breakfast will, of course, be prepared over the campfire.

Before breaking up camp the lunch will be set aside and will be placed outside the packs so that it can be con-



veniently opened anywhere along the trail.

It will consist of dried fruit, cheese or chocolate, hardtack, punch made from some extract combined with pure mountain water, and a snack, which may be canned fish or meat, peanut butter, jam, etc.

The dinner will be prepared after making camp and will consist of hot soup (made from extracts such as bullion combined with the juices of the vegetables, vegetable mix, noodles, etc.), a canned or dehydrated vegetable and the main course. Examples of the latter are canned beef or corned beef, sausages, tongue, spaghetti, spanish rice, creamed macaroni and cheese, etc.

This will be "topped off" with a beverage and a dessert such as tapioca or prepared pudding mixes, candy or canned desserts. Biscuits can be made in a reflector, collapsible, or dutch oven. Many interesting food combinations can be mixed over the campfire.

The next important procedure is to list all the necessary equipment. Factors of utility and weight are of prime importance. Again, it is impracticable to mention all the necessary items, but such things as a grate, can openers, a nest of pots and individual eating utensils top the list.

First Aid Includes

A good sleeping bag with a wool filler is indispensable in the higher elevations where one might wake up in the morning and find frost on the ground and ice on the water. Personal items should be reduced to a minimum.

The first aid kit should include, in addition to the conventional bandages and sterilizing items, a few special things to take care of emergency illnesses. If The Cinematographer's readers are interested in getting more complete details for planning their motion picture pack trip they may get practical suggestions in such magazine as Outing Club journals for food supplies, Boy Scout and Sporting Goods catalogues for camping equipment and the American Red Cross handbook for first aid equipment.

Assuming the trip has been well planned and all of the materials and supplies have been double checked we

are now ready to leave on our pack trip. Although our entire country is rich in scenic wonders the Sierra Nevada Range is the choice of many Californians because of its proximity to the cities.

There are many locations on both the east and west slopes of the Sierra where animals are available for rent or for sale, and where we could begin our journey into the Sierra. However, we select Yosemite Valley as a starting place because of the fact that all along the trail we are within a safe distance to help in the event that any emergency situation should arise.

Packing the Burros

In "The Trail Song" we opened the film showing the boys packing the burros. The kayaks are filled with supplies—and then are hung on the pack saddles. Over these we place the sleep bags, and finally the canvas is thrown over the entire pack and the ropes are tied. The boys are still trying to learn the "diamond hitch."

Our first trail thrills are the sights of the waterfalls. In the movies we featured interesting interpretations of the water rather than the usual "post card" scenes. One waterfall shot was introduced by the quotation: "Like a torrent of massive comets."

Then followed a vertical panorama showing the water plunging, like a mass of molten silver, over the cliff; then followed the formations of comets, and finally the panorama was climaxed with a scene of the water pounding against the rocks below, creating a heavy mist.

Intimate telephoto shots depicted the colors of the rainbows on the mist. Most photographers should find, as we did, that a little extra thought and observation will unfold countless opportunities for original interpretations of the ever appealing water scenes.

Exposure on Waterfalls

In "The Trail Song" we were fortunate enough to get a picture of a sparkling waterwheel with a buck feeding on the grass on the other side of the river. Then we followed with a close-up of the waterwheel in slow motion. In the resulting picture one could almost see the individual bluish-white droplets



of water glittering like jewels in the sunlight.

A few suggestions concerning photographing waterfalls are as follows: The water will usually require less exposure than a general meter reading will indicate.

Therefore, it is advisable to take the reading as close to the water as possible in order to avoid overexposure and the resulting loss of color quality. With regards to panoraming, the writer happens to be one of those who is rather "fed up" on abuses of amateur panoramic procedures.

Therefore, he is very conservative in his recommendations in this respect. However, the high waterfalls in some of the National Parks can be very beautifully photographed in a downward "pan." Although a tripod is recommended for nearly all occasions, it may be advisable to hold the camera in the hand while panning waterfalls, especially if the entire field of panning takes in both a vertical and horizontal motion.

It will be noticed that we do not include many pictures of the Yosemite Valley. Due to the length of the film, as well as to the fact that the Yosemite Valley proper has been seen and photographed by so many persons, we omit these more familiar scenes and start our picture with the beginning of the pack trip, which leads us into the more rarely seen high mountain country.

Portraying the Camp

During the entire film we try to create a pleasant balance of scenery and action by introducing as many activities as possible. Therefore, following this series of waterfall scenes we film the organization of our first camp. Here we concentrate on a series describing the procedure for preparing and cooking dinner.

In the new Exposition film we will try to describe one entire breakfast and dinner in detail, as cooked over a campfire. At camp we include action pictures of fishing. It is sometimes possible in quiet waters to get telephoto shots of fish swimming in the water.

The exciting climax happens when the trout is pulled out of the lake or stream. This series is followed with close-up shots of preparing and cooking the fish over the campfire. A few suggestions regarding the photographing of these camp close-ups are as follows:

At all times it is necessary for the "actors" to be totally unconscious of the camera. With the exception of directing them to register a pleasant expression occasionally, it is very important to caution them not to go into any of the self-conscious antics of "showing off" that are so prevalent in the so-called "rank amateur" films.

The first few times that "posey" films are viewed the friends look rather "cute," but after running them a few more times the photographer will invariably regret that he did not concentrate the attention of his actors on the beautiful trout they were cooking or

some other natural feature the appeal of which is everlasting.

With reference to light, it might be well to mention that the light in the high mountains is more intense than one would expect. The meter should be very carefully used, and the photographer should calculate his exposures very accurately.

Avoid Contrasts

Extreme contrasts of light and dark objects, such as light and dark clothing or white granite and dark figures, should be avoided. If the photographer wishes to get pictures that are uniformly satisfactory, he should remember that there are some combinations of light and color that cannot be satisfactorily photographed in color on account of the present limitations in latitude of color film.

Intelligent use of the meter will indicate these extreme conditions. One should not be afraid of shade. If the lens is sufficiently fast to record the light that is present, rich results can be obtained in uniformly subdued light.

The most difficult lighting, in the opinion of the writer, is the so-called "checkerboard" or spotted lighting. Although this condition can be very rich in black-and-white film it is rather dangerous to attempt it with the use of color film.

While on the subject of photographing camp pictures, it might be well to mention that night campfires photograph very beautifully on Kodachrome. However, the size and intensity of the campfire is of considerable importance. The Indians would say: "White man make big fire, him stay away; Indian make small fire, him come close."

It so happens that the photographer has to combine the habits of the white man and the Indian to make "big fire and come close." Otherwise he would just get a small red spot in the middle of the picture.

Campfires in Color

In photographing "The Trail Song" even experienced amateur color photographers were amazed at the quality of our fire, and the writer was asked what special "trick" was used.

We simply made a large campfire and photographed it close enough so that the fire filled the picture area. Humorous incidents naturally occurring in camp add much to the interest of the story.

Following this sequence of camp action our scenics include a few sunsets with

patterns of pine trees and mountain cliffs in the foreground, and then we start climbing through the beautiful granite gorges of the Merced River.

Here the burros play an important part in the continuity. They are "walked" over these thrilling trails and oftentimes the boys find it necessary to "push and pull." The feature comedy sketch at this point is our rather interesting "sit down strike."

The burro named Streamline had not previously been "broken in" on the trails, and he was very shy about crossing streams. The "sit down strike" scene shows twelve of the boys pulling the burro, and about three of them pushing. Audiences always enjoy this very amusing incident.

At Merced Lake

Our next camp was Merced Lake, where there was a magnificent display of mountain wild flowers. These delicate gems of nature are best photographed in medium shots and close-up portraits.

Here again it is necessary to determine the proper exposure for the flower. The meter is, of course, pointed very close to the object so that the surrounding light does not interfere.

Soon our party gains rapidly in elevation. As we approach a mountain pass we see from the trail spectacular panoramas of ranges of snow-capped peaks. Here is another opportunity to pan. In one shot I follow a boy and a burro while they pass in the foreground.

The background shows the extent of the mountain range. In another picture I panned very slowly, and paused on several points of special interest. A few suggestions for photographing an expanse like this are the following:

Usually pan from left to right and never swing the camera back over the same scene. Rehearse the pans so that you do not lose your composition during the course of the pan.

This rehearsal also will give you an opportunity to select interesting spots for pauses. Make sure that panning operations are slow and smooth. The tripod should be in proper adjustment.

If it is difficult to determine exposures for distant objects take a reading of a nearby similar object, if the light conditions are the same. Avoid too much sky area.

If for some reason you feature the sky and clouds calculate your exposure carefully. Be sure to use a haze filter for regular Kodachrome or a coral filter for Type A Kodachrome. These filters can be left on the lens mounts at all times.

Camera Equipment

While reviewing in my mind the climbing of some of these steep trails I am reminded of the importance of selecting "comfortable" equipment. Although I have climbed many mountains with different types of cameras in my knapsack, I have settled down to a trio that combine efficiency with light weight.

I use the Contax for color slides, the Superikomat B for black-and-white stills,
(Continued on Page 308)

To the Far Corners, Too

Johannesburg, South Africa.

To the Editor:

I would like to mention that I am extremely satisfied with the issues of your magazine, American Cinematographer.

I therefore inclose a further two years' subscription (7 dollars) for the magazine.

Yours faithfully

BRUNO ALDO TOMASELLI.



Illustrations (left to right) 1, 2 and 3

Teorey Tells How He Titled His "Golf Widow" with Bookleaves

By ROBERT W. TEOREY

Photographs by Milton R. Armstrong

SOME months ago I completed a story in scenario form in 8mm. film entitled "The Golf Widow." As this was my "super-colossal" effort I knew I wouldn't be satisfied with ordinary titles, so I cast about for a way to handle the situation that would appear professional yet be amateur in preparation.

Cut-out letters, typewriter titler and pin letters had been given due consideration, but each was discarded as lacking the finesse considered necessary for my epic. I finally concluded that hand-lettered titles would reward me with the desired effect, and a scrapbook, size 10 by 12 inches, covered with green burlap, was secured for the purpose.

The filler pages, which I intended to letter, were fairly heavy, quite smooth in texture and of a cream color that would photograph softly and without much possibility of a hot spot or flare from the light source.

Having procured my title medium, I penciled the wording of my titles on a piece of scratch paper. When it had been composed to my satisfaction, my next problem was the style of letters to employ. I had noted at that time a popular magazine with its stories titled in a very pleasing script, and promptly adopted the style for my purpose.

Several sheets were separated from the scrap book and the task of lettering was begun. The size of letters having been determined, guide lines were lightly ruled and title layouts sketched with a lead pencil. Main titles were of lower case letters approximately one and one-

half inches high with capital letters about two inches in height. Credit titles were of letters slightly more than half the height of the former.

Inserts Ornament

When the letters had been sketched I filled them in with India ink, using a blunt pen and fine brush for the purpose. After the titles had been drawn I felt they lacked something to be complete and decided a small drawing in the lower right corner of each would improve them.

The drawings were made in silhouette with a circular border about them and were made on a separate sheet of paper, which prevented spoiling a title in case of error. They were then cut out and

pasted in position on the title sheets. Each drawing was made to harmonize with a title—for instance, the title giving photographic credit was decorated with a moviemaker operating his camera.

The wording on the cover of the scrapbook describing the production, etc., (Illustration 1) was drawn in white ink on a sheet extracted from a snapshot album. These were trimmed to size and pasted into place.

My titles being in this form permitted me to film the book opening and the leaves turning into place apparently without visible aid. To secure this illusion, I attached a length of black thread to the upper corner of the cover, and a separate length in the same position to each leaf to be turned.

Shooting the Titles

A button was attached to each free end for easy handling. The book was then placed in the center of a piece of damask silk which had been crumpled on the floor. Each piece of thread with its button was laid out in the order the cover and leaves were to be turned.

The camera was set up on its tripod directly in front of the book with the lens about four feet from its center. Sighting through the finder, I arranged my composition and checked for parallax. The light source was a No. 2 photoflood in reflector set up at the side and slightly to the rear of the camera.

Ready to film the titles, I started the camera, faded in and slowly read the wording on the cover through twice, at which point Mrs. Teorey, with the aid of the first thread, slowly opened the

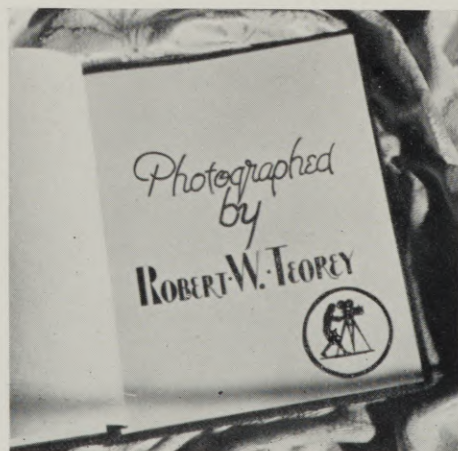
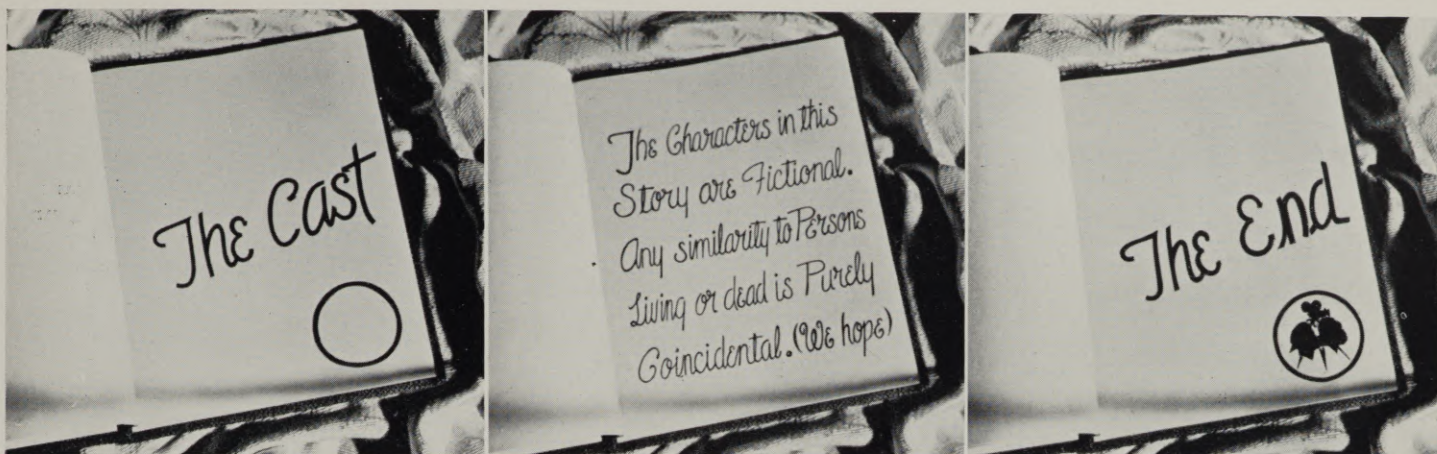


Illustration 4



Illustrations (left to right) 5, 6 and 7

book exposing the main title (Illustration 2).

This was read one and one-half times, and then by means of the second thread was turned slowly to the first credit title (Illustration 3). This and the one following (Illustration 4) were timed in the same manner as the main title. When the second credit title had been turned it brought to view the title worded "The Cast."

Introducing Cast

Short shots of the persons taking part in the story followed this title. On each

shot I superimposed by double exposure a title showing the part taken by the actor. White pin letters on a dull black background were used for this purpose. This sequence ended in a fadeout, whereupon I faded into the title commencing "The characters in this story are fictional," etc.

This title, with the addition of the words in parentheses "We hope" was intended to add a bit of professionalism tinged with a little humor (Illustration 6). The fadeout at this point was followed by the first scene of the comedy.

The end title (Illustration 7) was not turned but filmed stationary, opening and ending with fades.

In conclusion, I freely admit that more time and patience were required to prepare the titles illustrated. However, the results much more than compensated me for this. Since making them I purchased an inexpensive text book of modern lettering and poster design and pen points of various widths especially devised for hand lettering. With these aids I know that lettering my next group of titles will be greatly simplified.

"Sound Engineering" Is Splendid Example of Up-to-Date Text Book

FROM the press of D. Van Nostrand Company, Inc., 250 Fourth avenue, New York, has come "Motion Picture Sound Engineering." The book contains 570 pages and is finely printed. The intricate typography is a Hollywood product of Magoffin & Doye of Cahuenga avenue. Behind the publication of this splendid example of text book is the Research Council of the Academy of Motion Picture Arts and Sciences.

Within the book are the contents of the lectures presented to the courses in sound engineering given by the council. Chairman William Koenig in his preface sets forth that in the seven years that have elapsed since the Academy published "Recording Sound for Motion Pictures" there have been many advances in equipment and technique for recording sound.

Since its organization in 1934 the council's activities have grown until at the present time thirty-six technical committees are operating. The structure is erected around the chairman and a technical representative of each of the eight studios participating. The present publication has been two years in preparation, and the time and effort that have been expended in the printing of it on

the part of contributors have been without compensation.

A. P. Hill of Electrical Research Products, Inc., prepared the lectures given in the two courses in the fundamentals of sound recording, one in the fall of 1936 and the other in the spring of 1937. Fred Albin of United Artists, L. E. Clark of RCA, and John Hilliard and Harry Kimball of MGM prepared the lectures in the advanced course in sound recording in the spring of 1937.

Rolleiflex Salon in Los Angeles

Under the auspices of Burleigh Brooks, Inc., the third Rolleiflex Rollei-cord Salon will be held at the Hollywood Roosevelt Hotel June 27 to July 2 and the Los Angeles Camera Club, 2504 West Seventh Street, July 5 to 14. The exhibition hours are from 11 to 9 o'clock, except Saturday and Sunday, when they will be 11 to 5. There is no charge for admission.

There are many prints by some of the nation's foremost amateur and professional photographers. The judges were Adolf Fassbender, F.R.P.S.; Margaret Bourke-White and Herbert C. McKay, F.R.P.S.

In the two parts of the book are thirty-nine chapters. The titles of the twenty-four in Part I are: Basis of Motion Picture Sound, The Nature of Sound, Types of Film Recording, Noise Reduction, Re-recording and Preparation for Release, Microphones, Headphones and Loud Speakers, Film Drive, Film Processing, Reproducing Systems, Sound Circuits, Measurements in Sound Circuits, Phase Distortion, Transformers for Sound Circuits, General Network Theory, Attenuation Equalizers, Equalizer Design, Wave Filter Theory, Low-Pass and High-Pass Filters, Dividing Networks for Loud Speaker Systems, Vacuum Tubes, Amplifier Circuits, Rectifiers, Volume Indicators.

In Part II are: Elementary Considerations, Static Electricity, Direct Currents, Electrical Power and Energy, Magnetism, Electro Magnetism and the Magnetic Circuit, Electro-Magnetic Induction, The Decibel, Resistance Attenuation Networks, Generators and Motors, Alternating Currents, Vector Notation, Resonant Circuits, Vacuum Tubes, Triode Amplifiers.

"Motion Picture Sound Engineering" is a credit to the men who have given of their best to create it. Indirectly, and directly, too, it stands as a monument to an industry the executives of which had the foresight to work together in the common interest—and get somewhere—rather than continue in old paths—and in which progress was made slowly and painfully.

The net price of the book is \$6.

Sherlock of Sydney Tells How He Edits and Titles His Pictures

*From May Issue of Movie News,
Official Organ of the Australian Amateur Cine Society of Sydney*

AT THE first April meeting Vice President James A. Sherlock gave a short address on the subject of "Editing and Titling." At the outset he stated that his talk was directed more particularly to the very amateur amateur. From the sophisticated worker he craved indulgence.

Mr. Sherlock proceeded to demonstrate the method of using various editing and titling outfits, from the cheapest to the dearest, secured from the different trade houses, and these were made available for inspection after the meeting. The speaker proceeded:

The art of editing and making good titles is as varied as picture making itself and gives individuality to films. When a film is taken it is not sufficient to leave it as received back from the processing station with all the second rate photography in it.

You will find scenes that are too long, scenes that are too jumpy, scenes that are wrongly exposed, and work will fall on the serious cine minded person to put these various shots into a better form of continuity so that the pictures will tell a story.

Indispensables for editing and titling are: film cement, film splicer, a rewinder, a few 400 foot reels, some kind of film viewer, a box divided into small squares, and a pair of scissors.

Film Viewer Necessary

The construction of an editing board is quite simple. Two gear-driven emery wheels can be bought for about 3/6 each and mounted on a board. Some kind of film viewer is necessary, and can be purchased from most of our advertisers.

A cheaper way out is to buy a magnifying glass so that each frame can be enlarged and the correct one chosen for the scissors. Separate equipment will be necessary for titling. My titler has been made for one particular camera and a sliding base makes it possible to photograph titles and backgrounds different sizes.

It is essential that titles should fit into the theme or atmosphere of a picture. In my film "The Brook" titles were made, printed and bound together in book form. This form of title was chosen to give the effect of a poem being read.

The titles in "Surfdom's Initial Overseas Tour" are quite different. They were first filmed on reversal film in the titler, then the film taken out of the camera, rewound, and exposed again with the camera pointing straight down from a wharf on to rippling water. This I think helped to hold the atmospheric effect of this picture.

In filming the titles of "To the Ships of Sydney" I chose old English letters, as the continuity of this story was in the form of a will. The background was a neutral blue, which was the prevailing color throughout the film, so that the titles were in harmony with the rest of the picture.

Rules of Titling

Among the "Golden Rules" for titling are the following:

Do not use more than twenty words in any title.

Do not have your subject titles more elaborate than the main ones.

Do not state in a title what is evident from the scene to follow.

Do not splice two titles together.

Refer always to what is in scenes to come, never to what has been viewed.

Use simple language.

Titles should be complete sentences, containing subject, verb and object.

Humor in titles should not include fashionable catch phrases because at a later date the joke becomes stale.

Backgrounds should not overshadow title words, which should be distinct.

Titles should always be properly centered and balanced.

Daylight Preferred

When shooting titles, I find it better to use daylight rather than artificial light, and shoot titles at nothing under 5.6. Take your titles into the backyard, mount your camera facing north, your titler then faces south, and being perpendicular will not be in the direct sunlight and white letters can be shot on a clear day at 5.6. This will give better depth and clearer details. So much for titles.

In editing it is a good plan to make a note of each shot in the film, then get the scissors and cut each scene from the reel. Place these in a partitioned box, and if there be more than one reel to edit continue this practice until you have accumulated sufficient to commence the work of rejoining these strips.

If you have done your work thoroughly, you will notice that while some scenes are too long others are overexposed or underexposed. These can be deleted at will.

Now do not touch your film again until you have decided on the order that you think best for making a story from your various shots. For instance, we have taken shots 1, 2, 3, 4, 5, but these may make a better picture if put 5 3 4 2 1.

Give this plenty of thought before you commence rejoining your film and you will find that by varying the continuity you can get quite a different meaning from your film. (Applause).

Engineers' Projection Committee Battling for Clear Theatre View

THE Projection Practice Committee of the Society of Motion Picture Engineers has considered in great detail, and over a period of years, methods of increasing the enjoyment of theater patrons in their viewing of the screen picture.

The committee regards clear and unobstructed viewing of the screen as an essential and major factor in audience satisfaction. It disapproves of any form of auditorium design or seating arrangement which prevents the individual patrons from seeing all parts of the screen at all times, and regardless of the positions of other patrons.

There are several degrees of obstruction of viewing the screen. Arranged in order of diminishing desirability, these are in grades:

1. Clear vision regardless of positions of patrons one or more rows ahead.
2. Clear vision regardless of positions of patrons two or more rows ahead.
3. Partially obstructed vision under almost any conditions.

To reduce obstruction of viewing there are several methods available including the following:

a. Staggering seats in successive rows (which may reduce the number of seats or cause "ragged" aisles).

b. Raising the level of each row of seats relative to those before them (which may lead to an impractical amount of rise in some theaters from front to back).

Fall and Rise

c. Adopting a suitable combination of fall and rise of successive rows of seats from front to back (which method requires further study in practice on a wider scale under various conditions).

One or more of these available methods should be seriously considered by theater architects. In no case does the Projection Practice Committee approve any seating arrangement falling appreciably below Grade 1; that is, the committee disapproves any noticeable and unpleasant obstruction of the screen view of one patron by other normally seated patrons no matter where located.

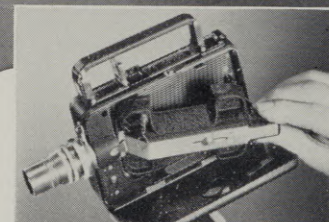


FIRST among this 16 mm. Ciné-Kodak's many features is its 3-second loading—with films that come pre-threaded in light-tight metal magazines which slip into the camera.

FOUR FILMS IN MAGAZINES—Ciné-Kodak "Pan" for general outdoor work in black-and-white... "SS Pan" for black-and-white movies outdoors in poor light, and indoors with artificial light... Kodachrome, the full-color film that made color movies so popular; "Regular," for outdoor use, and Type A for indoor Photoflood light.

LENS VERSATILITY—the ultra-fast Kodak Anastigmat *f*.1.9 lens is instantly interchangeable with the six accessory telephotos and one wide-angle lens available.

POCKET SIZE—Its sturdy case of die-cast aluminum, finished in pin-grain leather and chromium trim, measures only 6¼ by 4 by 2 inches. Carrying handle, incorporating finder system serving all eight lenses, folds flat when not in use.



You slip the Focusing Finder into the film chamber of the Magazine Ciné-Kodak just as you would a film magazine.

THREE SPEEDS—16, 32 and 64 frames per second. Smooth-running motor supplies power enough for extended scenes—and automatically cuts off when rewinding is needed.

FOCUSING FINDER—shown above, right—slips into the camera and shows exact field covered by any lens, and a magnified section of field for critical focusing. \$20.

COMPARTMENT CARRYING CASE—shown above—holds camera, extra magazines, lenses and filters, \$27.50.

AND FOR PROJECTION—Kodascope Model G—Eastman's new projector with 2-inch *f*.1.6 lens and 500-watt lamp for showing 16 mm. movies at their best. \$123.45.

Ciné-Kodaks, Kodascopes, and Ciné-Kodak Film are all Eastman-made, designed to work together and backed by dependable, world-wide Eastman service.

Magazine Ciné-Kodak, with Kodak Anastigmat *f*.1.9 lens, \$125

EASTMAN KODAK COMPANY, ROCHESTER, N. Y.

Film Your Home Guests in Story and Thereby Avoid Sheepish Grins

When Your Screened Subjects Are Natural
in Appearance Your Movie Has Permanent
Value—Just a One-Time Show When Not

By ROBERT W. TEOREY

NOT so long ago when Tom, Dick or Mary called at my house, the procedure was to bring forth the trusty cine-box and while they posed in front of its crystal eye a cinematic recording was taken. When the results were projected it is true that Tom, Dick and Mary enjoyed seeing their countenances flashing from the screen.

Perhaps they liked the way Tom grinned sheepishly at the camera as he nervously shifted his feet. Maybe the manner in which Dick fumbled with his thumbs as he anxiously waited for the camera to stop whirring appeared amusing, or that Mary had a trace of shy charm that was appealing as she twisted her purse and alternately shifted her gaze from the camera lens to her feet.

At any rate, I had movies of my friends, and eventually I acquired a lot of footage that was placed on a single reel.

There came a time when I awakened to the fact that my reel of friends lacked in popularity. In the course of an evening's entertainment when I desired to project it I would find that my inclination to do so was usually vetoed by my family inferring the reel wouldn't be interesting to the audience.

Now I knew that Tom, Dick and Mary liked to see themselves in animation on the screen. After mulling the matter over, however, it occurred to me they weren't particularly interested in seeing similar shots of strangers, as the scenes were purely personal, lacking in plot or action to offer screen amusement.

Detracted from Interest

In addition, the subjects were usually self-conscious or at a loss for something to do, and that also detracted from the general interest of the pictures.

Realization dawned on me that my reel of friends was just an accumulation of snapshots much better taken with a still camera.

Further deliberation definitely decided me that a small plot would be the main requisite when filming my friends or relatives in the future. This requirement would enable my subjects to perform specific tasks that would relieve them of camera consciousness and would give me a series of shots that would offer diversion as the scenes were revealed on the screen.

Filming my friends in story was the rule thereafter.

One evening shortly after my resolution a young couple dropped in for a visit. A year or so previously I had taken a couple of shots of them but now I wanted to picture them in a short skit. After a few moments of thought I decided on a little plot that might aptly be titled "Boy Dates Girl."

The story opens with a close-up of the boy playing solitaire. Becoming bored, he flings the cards away and sinks his chin in his hand apparently fed up on the game. Suddenly his face brightens into a smile. Reaching for the telephone he begins to dial a number.



Robert W. Teorey
Late first sergeant United States Marines, now transferred to reserve.

The next scene presents a long shot of the girl lying on a davenport busily munching chocolates the while she reads a book. As the telephone rings she lays the book down and reaches for the instrument. A cut to the boy shows him eagerly talking into the telephone.

Double Solitaire

Following that is a close-up of the girl as she smiles into the phone and nods her head as in agreement. A fade-out

of her hand replacing the receiver ends this sequence.

A fade-in next brings to view the boy and girl seated at a table. They are playing DOUBLE SOLITAIRE. A close-up of the table top as the cards are briskly played fades out into the end of the skit.

Usually when a boy dates a girl it isn't for the purpose of playing double solitaire. However, the idea was humorous and permitted a surprise ending. Not much footage was required, yet I had continuity and story interest and my friends were so absorbed in performing their parts that no trace of self-consciousness was evident in the finished pictures.

On another occasion a boy and girl in their late 'teens called on the young man of the family, and having no movies of the visitors it didn't take me long to decide on a little story wherein the boys would vie for the girl's favor.

The opening scene is a long shot of the girl standing on the sidewalk apparently waiting for a street car. Two young men are seen approaching in the background, and as they near the girl one of them halts and, grasping the arm of the other, motions toward the young woman.

A close-up shows them in conversation. One extracts a coin from his pocket and flips it in the air. As he catches it they examine the result of their gamble. The loser draws back while the winner of the toss nonchalantly walks toward the girl.

Boy Is Rebuffed

The young man is next seen to sidle up to the girl and speak to her while the other boy watches the proceedings in the background. The girl glances disdainfully up and down his length and then totally ignores him.

Rebuffed, he shrugs his shoulders and continues down the street a short distance, where he stops to observe the luck of his partner. The other chap adjusts his tie and saunters to the side of the girl.

As he speaks to her, she measures his length also. Finding that she is pleased with him, she smiles, and, as the boy proffers his arm, takes it and they move down the street. The next shot shows them passing the unsuccessful youth, who looks quite chagrined while the winner struts and grins triumphantly at him.

A cut to a close-up of the unlucky one

shows him drawing the coin from his pocket. He looks at it in disgust and casts it away as the scene fades out.

One other bit of continuity is of myself in the role of an erring husband telephoning the trusting wife that I would be late in getting home from the office as the boss required me to work with him that evening. I applesauce her (in titles) with sugary talk and telephone kisses as I pave the way for an evening away from home.

All the scenes are close-ups of myself phoning (with facial expressions), and my speech is presented with titles prepared on a typewriter titler. The last title of the skit acknowledges a statement from my wife that the boss has just dropped in at my home, while my facial expression in the last scene denotes my discomfiture and chagrin at being found out.

Idea from Rotogravure

I procured this idea from the rotogravure section of a local newspaper showing several photos of a character actor enacting the role in stills. Since then I have always been on the lookout for similar items to use as opportunity afforded. However, anything at all can be used in working up continuity of those you wish to film.

Some personal characteristic, hobby or

sport will offer you a variety to select from. Perhaps you wish to record a few shots of a friend whom you know to be an avid golfer. Film him doing the thing he likes best.

You might picture him taking elaborate pains to tee a ball. As he prepares to drive, the ball rolls off the tee. (This can be managed with a piece of black thread manipulated out of camera range.)

Repeat this procedure two or three times. Then show him throwing his club down and leaving the scene. The next shot shows him returning with a shovel in his hand, and as he sinks the point into the earth cut to a shot showing him taking his stance as he prepares to drive again.

This time the view shows that the ball is perched on a mound about 6 inches high. He drives off in a shower of dust which ends a short sketch of your golfing friend. Just simple continuity, yet you have a story of the tribulation of a golfer.

None of the skits outlined here require much film, but still they offer screen entertainment and occupation for the principals during filming which permits a more natural appearance on their parts that is not only pleasing to them but to all who see.

In concluding, I repeat, **FILM YOUR FRIENDS IN STORY.**

logical laboratory and taught histological technique and also became an authority in the use of the microtome. He was active in working out cures and treatment for gassed soldiers.

The vice president joined Spencer Lens in 1922, and barring a brief period as general sales manager for E. Leitz has been with the company ever since. He has been on an extended trip covering the company's branch offices in the West and a visit to the convention of the American Medical Association in San Francisco.

Good Polish Color Subject in Hollywood for Duping

AT THE request of the producers, the Polskie Towarzystwo Fotograficzne, Sekcja Filmowa, the Polish film in Kodachrome "A Province in Poland" has been delivered to Stith-Noble Corporation of Hollywood for duplication. The film was consigned to Duncan MacD. Little of New York for forwarding.

In New York the picture was shown by its custodian to Dr. Gruszka, Polish Consul General, and to Colonel and Mrs. Emer Yeager of Governors Island, the army post in New York harbor. For three years the colonel was military attache in Warsaw, where he was well acquainted with Tadeusz Jankowski, producer of the subject.

All of these were much pleased with the picture. At the East Side High School in Newark, N. J., a Polish neighborhood, the audience which viewed the picture was large and enthusiastic.

The music as indicated by its producer in type is pastoral, religious and folk dance, and finely characterizes the nature of the production. In its colorful Old Country costumes and customs it makes a most interesting documentary picture.

President and Vice President of Spencer Lens Visit Western Area

DURING the past month Los Angeles has been visited by two men high in the field of optical instrument manufacture—Harvey N. Ott and Harold D. Rhynedance of the

Spencer Lens Company of Buffalo, respectively president since 1919 and vice president and general sales manager since 1936.

Mr. Ott was away from his office for over three months, during that period doing much traveling in the Northwest and returning by way of Texas. His chief objective was maintaining contact with the college laboratories officials with whom he has been in close touch for many years.

The president of Spencer Lens has been with the company since 1903, becoming treasurer in 1914. When he was nine years old he obtained a small magnifier and began the study of insects and plants. A half dozen years later he earned the money to buy a compound microscope from college professors.

At Albion College his major interests were the biological sciences, expanded by a post-graduate course at Michigan. There was a period of teaching, followed by work with an optical company. With Spencer his field quickly was enlarged from selling to include designing, and his work has embraced the two ever since.

Mr. Rhynedance also is a specialist on the microscope and optics generally. While at Yale he worked in the zoo-



H. N. Ott, president, Spencer Lens



H. D. Rhynedance, vice president

Better Kodachrome Results Come from Choosing Unusual Lightings

By JAMES WONG HOWE, A.S.C.

SPEAKING of Kodachrome, the rule books prescribe lots of sunlight, with the sun directly behind the camera; in other words, the flattest of flat lighting—and lots of it.

That is unquestionably a good, conservative plan to follow when shooting color; if you follow it you can hardly miss getting technically good color scenes. But you also are likely to miss a lot of superlatively good color scenes simply because the weather man doesn't always deliver the sort of weather the rule book demands.

All of which is merely a prelude to the suggestion that we can, once we're familiar with the process, toss the rule book and its injunctions lightly aside and not only shoot Kodachrome under unconventional lighting and weather conditions, but in surprisingly many instances get better pictures than we would if we kept to conservative practice.

This is based on personal experience shooting 16mm. Kodachrome in my magazine cine-kodak. During the intervals between making studio films I often wander around California with car and camera. Since Kodachrome has been available my camera has almost always been loaded with color film.

Inevitably, on these vacations, I've encountered what Californians call "un-

usual weather"—in other words weather that is not perfect. And just as inevitably I've often run into pictures I couldn't avoid at least trying to photograph in spite of the weather.

Results Successful

The results have been successful much oftener than would be the case in black-and-white camerawork. For in Kodachrome we don't have to rely merely on black-and-white contrasts in tonal rendition and lighting: we have color contrasts as well.

Perhaps one of the best examples of this is in a Kodachrome scene I made one foggy evening driving into San Francisco from the north, across the new Golden Gate bridge.

We reached there late one afternoon, just as the fog was rolling in from the ocean. As we approached the bridge all we could see of the Golden Gate was a solid mass of gray fog, with the towers and the red-painted cables of the bridge thrusting themselves from the top of the fog bank.

At different points during our approach I filmed it—in color. The results, as I later saw them on the screen, were among the few color scenes I've seen which could honestly be called "different." The fog, of course, was just the

sodden gray mass of mist that the eye saw. Above was blue sky. Sticking starkly above the fog were the ruddy towers and cables of the great bridge.

I continued these shots from the car, as we drove closer and finally plunged into the fog. And I kept on shooting as we crossed the bridge—in the fog.

The people who write conservative instructions would have held up their hands in horror—and piously folded their cameras without exposing a single frame. In black-and-white, even with the best film, the pictures filmed from the car, driving through that fog would have meant nothing.

Effective in Color

But in color! Strange as it seems, these scenes are tremendously effective. As we drive along through the fog all that can be seen is a gray mistiness, through which the hood and fenders of the car can be vaguely discerned. Suddenly there appears a ruddy glow in the misty distance. It grows quickly and divides into the headlights of an approaching car. . . . Rushes close, and passes, leaving the scene gray and mysterious.

Again that same evening, I found another opportunity for some unusual color scenes—again under conditions where conservative adherence to rules would have said I simply shouldn't shoot color.

As we drove into San Francisco itself dusk was falling and it had commenced to rain. The street lamps and signs along Market Street had been turned on. The pavements were wet and glistening.

To the eye the effect was picturesque in the extreme. I decided to try a few shots and see what the result would be in color movies. I held the camera in my hand, and made a number of scenes from inside the car as we drove along.

On the screen the scene was reproduced almost perfectly, though of course the incandescent lamps produced more red than would be strictly natural. But the camera and film captured faithfully the basic elements of the scene—the windshield, momentarily clouded over by raindrops, then cleared by the windshield-wiper. Beyond was the shiny wet pavement, full of varicolored reflections; the lights of the cars on the street; the many hued signs on stores and offices; over all the faint, diffused illumination of the twilight.

Shooting in the Rain

It is one of the most striking scenes I have ever photographed. It really makes one feel wet.

A few days later, stopping at Monterey and Carmel on the way back to



James Wong Howe, A.S.C., takes a light reading the while Irma Selz for The New York Sun makes a sketch of the photographer.

Hollywood, I carried this a bit farther. There was no rain this time, but I could not resist shooting a number of scenes—both landscapes and close-ups—in the early twilight, after the sun had set.

Exposure would have been a bit of a problem but for the f:1.9 lens on my camera, but the resulting scenes were unique. The soft twilight illumination gave an effect I couldn't have obtained in any other way.

Another unconventionality I might mention is that when you have to make color scenes in locations where, on a sunny day, you would be in heavy shade, you'll usually do a lot better to wait until you have a cloudy day. The clouds diffuse the light, and actually give you more exposure than you could get on a bright day.

I have seen instances where, to get an exposure in such shadows on a sunny day, one would have to use his lens wide open, but where, on a cloudy day, it is actually necessary to stop down!

When I was photographing "Tom Sawyer" in Technicolor one of the black-and-white habits I had always to guard against was worrying about using lighting to separate the different planes and objects in a scene. It was hard to remember that in color I had color-contrasts to do what I normally had to do with lighting contrasts.

For instance, there was the scene where Tom walked along the picket-fence, balancing a feather on his nose. In black-and-white I would have had to backlight his figure to make it stand out from the background.

Working in Technicolor I caught myself starting to do the same thing. Then I stopped, for the color contrast between his red-brown hair and the blue sky was ample to give me excellent separation. The same thing works just as powerfully in Kodachrome in 16mm. or 8mm.

Nature Best Guide

In both professional and amateur color cinematography I think much too much emphasis is laid on color combinations. Actually, the best guide is nature. I have never known nature to provide a color combination, either in an individual object or in a scene, that was not artistically pleasing.

It may break all sorts of learned laws of color arrangement—like some of the brilliant green, red and blue landscapes of Bryce Canyon and Zion National Park—but the result is still pleasing.

Only when man intrudes his faulty color-sense is there likely to be a note of artificiality.

The best guide as to whether a color scene will be good or not is, I think, the simple test of asking yourself, "Does it look pleasing to my eye?" If it does, it is likely to be all right in color on the screen. If not, you will probably find some man-made artificiality the seat of the disturbance.

The same test can pretty well be applied also to lighting and weather conditions. Assuming always that the illumination is somewhere nearly within the

technical limits of the film and your lens and camera, you can forget what the rule book says about perfect, flat light-

ings and lots of light, and decide whether or not to shoot by asking yourself "Does my eye accept it as good?"

Rare 65-Pound Quartz Crystal Comes to B-L Factory from Brazil

ONE of the largest and finest quartz crystals ever to enter the United States recently went into the vaults of the Bausch & Lomb Optical Company. Coming from the Province of Minas Geraes in Brazil, where it was brought by mule pack from the diamond section of the Serra da Mantiqueira range, 1500 miles from the coast, the huge crystal weighs sixty-three pounds and cost \$18 a pound. Based on optical quality, experts believe it surpasses any museum piece of this type in the country.

Although quartz, a form of silica occurring in hexagonal crystals, is distributed throughout the world, no deposits of suitable optical quality have been found in the United States.

Reflect and Refract

The crystal is solid matter in its most perfectly developed and naturally organized condition. Its exterior is characterized by a form of extraordinarily regular geometrical design. The internal structure is, likewise, so regular that the arrangement of the structural units, or chemical molecules, is precisely the same about one point as every other point.

"If the growth of the crystal has been slow, undisturbed, and unrestricted in

all directions," says Fred C. Brueck, who has studied optical minerals for 25 years, "its external shape is that of a closed solid the surface of which is entirely made up of numerous plane facets, or 'faces,' meeting in straight edges, brilliantly smooth, as if highly polished.

"The arrangement of these facets, measured by their mutual inclinations, is characteristic of each crystal. Frequently the facets are not only truly plane, but as highly polished as though done by a jeweler's lapidary."

Light is reflected and refracted through the crystal. Viewed in sunlight or bright artificial light, the scintillation of spectrum-colored rays shows the beautiful properties of transparent crystal.

Quartz is a uniaxial crystal—one with two different directions of refractive index—and the interference colors may be brought about by the phase difference in various wavelengths of lights. The crystal may absorb part of the components of white light, producing a definite color, which not only gives color to the mineral, but also modifies the tone of interference colors by removing from white light the components absorbed by the crystal.



Fred C. Brueck for the Bausch and Lomb Optical Company examines a sixty-three-pound quartz crystal, recently imported from the diamond section of Brazil, 1500 miles from the coast.

Notes of the Movie Clubs

Chicago Cinema Club

THE Chicago Cinema Club staged a party June 12—it was on a Sunday—in the form of the First Cinema Club Fry. The members supplied their own steaks and hardware. For those who did not drive cars transportation was supplied.

One of the features of the day's entertainment was the making of a movie from a script supplied by Peter S. Bezek well in advance of the stated day. It was suggested the members study it and then plan to film it according to their own conception of the plot.

There should be an abundance of fun when the club sits in on a showing of the various and varied interpretations of the script.

But so that moviemakers the world around may know what it is all about we are taking the liberty of reprinting Mr. Bezek's script—and we shall endeavor to learn what happened as a result of the party. The script follows:

Subject:

The Chicago Cinema Club Steak Fry

Open directly on a series of scenes which will show the preparations for the steak fry—one man collecting wood, another fixing the coffee, another cutting the bread, another slicing the steak, etc. You may wish to establish that these are Chicago Cinema Club members at this point. Then into the scene appears a man with his pockets and hands loaded with mushrooms. Close-up of him as he speaks excitedly:

Look, fellows. all the mushrooms we

want, just for the picking. Ah, good old Ma Nature!

Everyone crowds around him. Some-one questions whether they will be safe to eat, but he receives the reply that they certainly look all right and that it is the correct time of year for them. Eagerly they commence to cook them in with the steaks. Fadeout on close-up of frying pan as the mushrooms are put in and fade in on scene as the mushrooms are being forked out. Someone jokingly suggests:

Just for the sake of science and our own stomachs, let's try them out on the dog—what do you say?

They all agree and the plan is carried out. The dog eats them hungrily as all watch him with expectation. Include several close ups of the various faces. Finished, the dog continues to act normally, so everyone laughs at the doubters and at their own fears, and all commence to eat. Somewhere among these eating scenes include a brief shot of the dog wandering about the campfire and then slowly walking off into the woods.

Abruptly, after the food has disappeared and everyone is lounging happily about the fire, a farmer appears on the scene. Close up of him as he asks:

Sorry, boys, for butting in, but do any of you own the dead dog that's lyin' down the road a piece?

Quick reaction shots of everyone silently mouthing the words "Dead dog!" A quick search tells them that their dog quite definitely is gone. They thank the farmer and he leaves. Now everyone commences to feel strange pains and it is not long before many are

stretched full length on the ground. (You can carry these scenes out as far as your taste and dramatic ability allow.)

Then, just as abruptly as before, the farmer reappears leading their dog which is walking as if in perfect health. The boys all rejoice and question the farmer about the dead dog. He replies in a nonchalant manner:

Oh, yes, guess I didn't say—the other dog was run over by a car out there on the highway.

Fade out on reaction shots or on the campfire.

Minneapolis Cine Club

Ormal I. Sprungman retires from the editorship of the Cine Clubber with the issue of June 22. The official organ of the Minneapolis Cine Club has been under the same hand since its first issue, and its latest was Volume 2, No. 6. It is hardly likely any other amateur club has had the advantage of possessing an editor with the practical magazine background equaling that of Minneapolis.

The retiring editor thinks he should go out with the old officers and let a "new type-pounderouter" bring the news in the fall. The Minneapolis club has indeed been fortunate—and its bulletin in all departments, in conception, appearance, content and sparkle, has been something out of the ordinary.

The closing meeting of the season, on June 22, was held at the Minnesota Valley Country Club. Dan Billman Jr. screened 1200 feet of color exposed last February on Oahu Island. Thirty recordings were used in the synchronized accompaniment.

The Canadian National Railways is sponsoring a transcontinental camera tour into the Pacific Northwest and the Candian Rockies. The train leaves Minneapolis August 1 and returns August 15.

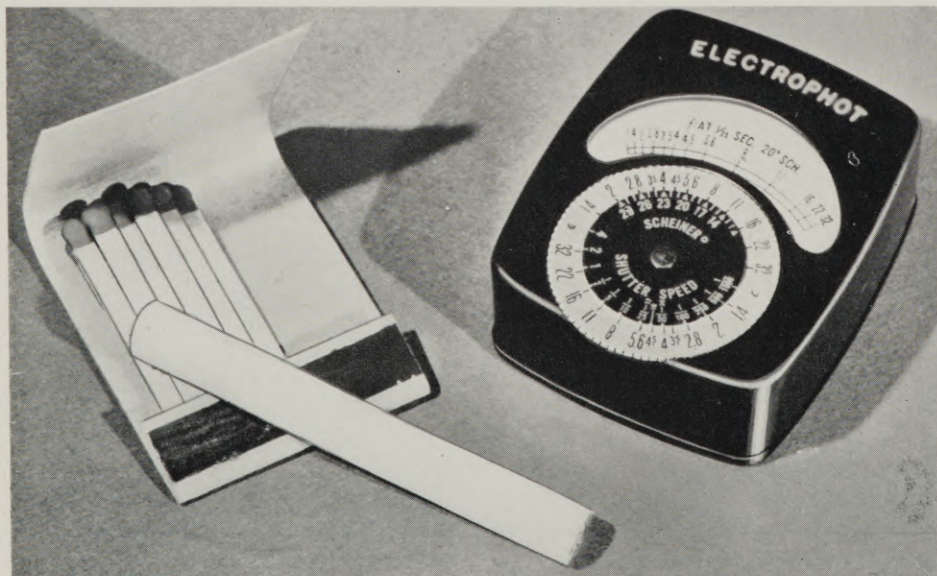
Title Kinks

Park Cine Laboratory of New York City, makers of special trick titles used

Electrophot Exposure Meter

Designed to conform to the demands for an instrument that will meet requirements for amateur and professional photographer the Rhamstine Electrophot Model 10 is announced by J. Thomas Rhamstine of Detroit. It is 1 15/16 by 2 5/16 by 7/8 inches in dimensions. It weighs 4 1/2 ounces.

"Designed for both movies and stills under all practical conditions," says the manufacturer, "it combines the principle of direct reading in f stops for still pictures with an instantly available rotating dial for special films and altered speeds as well as for movies."



The Rhamstine Model 10 Electrophot exposure meter for motion pictures and stills

in the club's recent Movie Party show, unfolds its professional secrets in a note to the Cine Clubber editor:

"We use several methods for superimposing titles on backgrounds. One method is to shoot the background first, wind back, then shoot the title. This, of course, applies only to negative titles, since the white card would photograph black and burn up the background. For direct positive titles, we use one of two methods, whichever happens to be most convenient for the particular job.

"We make a paper negative or negative photostat of the background and print the title on the negative, or we have the background airbrushed on celluloid or glass and place the title card behind it on the title board. Either one of these two methods permits us to do the filming in one operation.

"For fading on positive stock, we use an Eastman Model A camera, rebuilt with forward and reverse takeups, automatic dissolves, wipes, and other gadgets. Lighting used consists of two 165-watt projection lamps, about six inches in front of the card and about two inches on either side of the card.

"In making the fade, our cameraman gradually slows down his cranking until he comes to dead stop, meanwhile slowly opening up the lens from $f/5.6$ to $f/3.5$, its widest aperture. This results in enough over-exposure to make a very smooth fade."

Los Angeles 8mm Club

The meeting of the Los Angeles 8mm Club for June was held at the newly re-decorated Eastman auditorium on Santa Monica Boulevard, on the 14th, and was called to order at 8 p.m. by President C. G. Cornell.

A committee consisting of John Walter, chairman; William Horton and Phil Richards was appointed to report to the club at its July meeting on the advisability of incorporating. The various committees were then called upon for their reports, among which was a splendid report of the club outing held on May 21 at Hidden Valley. Those pictures are to be shown at the July meeting and a prize awarded to the best one.

Volume II, No. 3, of *Thru the Filter* was distributed and it was without doubt the finest edition so far this year. Miss Jane Gay announced that since she

would not be in Los Angeles to edit the August number the assistant editor, Randolph Clardy, would take over the task, which means that it will be in capable hands. Mr. Clardy, however, denies that he intends putting out a Sunday supplement in full color but says the next issue might be in sound.

The next meeting has been designated as "gadget night." Every member was urged to bring his pet hallucination and that a suitable prize will be awarded the most novel, useful, interesting and original gadget. It was also announced that at the July meeting a speaker from one of the major studio scenario departments would tell the members in thirty minutes what it had taken him thirty years to learn about writing simple, workable scenarios, applicable to our needs.

Last and in many respects most important was the showing and judging by all those present of the pictures submitted for the club's semi-annual contest. Twelve subjects were entered and were run in an order determined by lot. No names were given other than the title of the picture. In the order in which they were shown they were as follows:

"Our Dog," "Yosemite in the Springtime," "Pacific to Atlantic—1936," "The Rise and Fall of Mary Margaret," "The Golf Widow," "Sherwood Lake Outing," "Yosemite in the Winter," "Spring," "Death Valley," "Needed a Social Secretary," "Hell's Bells," "Holidays With the Camera."

Owing to the lateness of the hour the ballots were not counted, but it was decided to award the prizes at the July meeting. Those who had better be there to receive their awards are A. B. Callow, first prize, for his picture in kodachrome, "Needed: A Social Secretary"; Robert W. Teorey, second prize for "The Golf Widow," and Bion B. Vogel, third prize for "The Rise and Fall of Mary Margaret."

The meeting was adjourned at 11:30 due to the fact several of the members considered the following day a "working day."

BION B. VOGEL, Secretary.

About That Light Switch

John Walter in *Thru the Filter*, official organ of the Los Angeles 8mm. Club, gives a tip on the way he creates a profanitysaver or something, and this is the way he sets it forth. (It may be remarked in passing the speaker qualifies as a real gadgeteer, for to the front of his camera didn't he attach a field glass holder for telephoto shots?):

One of life's mysteries is why the light switch is always a mile from your projector. Remember the times you, your frau or a friend have stumbled to and from that switch? Don't stumble, fumble or bumble any more. Spend 50 cents and turn your lights off and on without moving your seat.

What to buy and how to put it together: 15 feet (at least) double length wire; 1 plug; 1 switch; 1 double floor plug. All of these can be purchased at a 10 cent store.

The switch is placed at one end of the double light wire, the plug at the other end. The double floor plug is cut into one only of the wires in the line, at a distance sufficient so the plug from your floor lamp can be placed in the double floor plug.

The length of your light wire depends on the distance from your projector to your electricity source. It's better to have more wire than you need than not enough.

This may sound and look like a Tizzies Lish recipe, but it's the handiest doo-dad we've had in many a moon. (Patent, copyright #XX.)

Alhambra Movie Makers

At the June meeting of the La Casa Movie Makers of Alhambra the wheels of time were turned back to the days of early efforts by the 16mm. fans. Members were asked to run the first films ever made by each. Mr. Oden ran a film in Kodacolor showing the 1932 Olympic Games.

Mr. Battles showed his first effort made in 1931 of a cross-country motor

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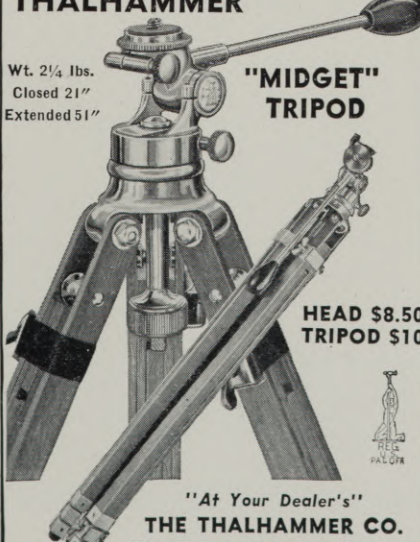
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trip to the East and also shots of scenes of his boyhood days on the farm.

Mr. Carnahan screened a fine film made of the historic Huntington estate of Pasadena. These films were of much interest, as it clearly showed the improvements made by manufacturer and also by the movie maker.

In the 8 mm. class Mr. Johns showed a fine film of Glacier Park in color. This was made on the occasion of the annual outing of the Sierra Club, in which over a hundred took part.

Recently the La Casa Club has invited a group of "candid camera" enthusiasts to join in the interesting meetings held monthly. Of this clan Mr. Thompson showed a large number of 35mm. slides in color of Bryce Canyon. He clearly demonstrated the excellent manner the small still camera adds to the interest of the motion picture.

It was voted to hold no meetings in July and August because of the vacation season. The next meeting in September will give a showing of results of another "uncut film contest" on which members will be grooming themselves during the summer.

R. A. BATTLES, Publicity Chairman.

Los Angeles Cinema Club

The Los Angeles Cinema Club met June 14 for dinner at the Mona Lisa.

President Gram read a tribute to Dr. LaTouche that appeared in the Dental Magazine. Mr. Thomas spoke on articles appearing in current issues of photographic magazines and also methods that help in editing film.

President Gram requested members having guests to please introduce them.

A scenario that was received from the Chicago Cinema Club was read.

Group camera insurance was brought up for discussion. The matter was referred to the board of directors for investigation and report.

President Gram announced that the contest for the evening would be judged by the entire membership. The contest films were projected with the following results in order of awards:

1. "The Pumpkin Pie," by Mr. Bennett
2. "The Reel Answer," by Mr. Orme
3. Mr. Tracey Hall's picture of Norway

The meeting adjourned at 10:55 p.m.

At the preceding meeting in May a 100-foot film taken by Mr. Nelli was shown for criticism. Also projected for criticism was a film submitted by Mr. Miller, a guest of the club.

The pictures taken by the club of the picnic at Lancaster Lake in 1933 were shown.

Film previously awarded to Professor Newmeyer for experimental study was shown. They related to the effect of speed and direction of movement of persons and automobiles. He also showed some excellent shots taken by students at U. S. C. on related subjects.

Mr. Mitchell conducted the monthly review and discussion of current literature on motion pictures and read part

of an article on supersensitizing film by the use of mercury. Articles on exposure, lighting and camera speeds were called to the attention of the members.

William McGrath, professional screen writer, spoke on horse sense of photography, expressing many rules and methods of obtaining continuity in pictures.

Elton Walker's kodachrome pictures of Yellowstone Park were shown.

Philadelphia Cinema Club

Musical background for amateur moving picture film has become almost commonplace, and is regularly heard at every meeting of the Philadelphia Cinema Club.

Something novel, however, was presented at the June meeting, when "Wan-

derlust," an 8mm. Kodachrome presentation of Mr. and Mrs. F. Hirst, was re-exhibited to the members, with a complete musical score prepared under the supervision of Mrs. Hirst and played by her on the piano for the full complement of three reels.

"Wanderlust" is one of the finest 8mm. films ever exhibited. The title work amplifies the picture work, and the further addition of the musical accompaniment represents grand entertainment.

"Europe 1937" was the title of a 16mm. color presentation by Mr. McCandlish, one of our newer members and represents his first offering in this line.

Messrs. Bessor and MacLain put together their "Poem of the Seasons," a color presentation depicting the brilliance of autumn coloring, again enhanced by a dual turntable musical accompaniment.

"A Technical Thought," by G. Pittman, chairman of the Technical Committee, reviewing from both a statistical and technical viewpoint the findings in our last film contest, highlighted the evening's entertainment.

The conditions of the fall contest were announced at this meeting, the principal departure being the limitation to 100 feet of any presentation in this major contest. The results achieved in our 50-foot contests were so universally good that it is felt 100 feet will be ample for the major contest of the year. More details of this contest will be available at a later date.

B. N. LEVENE,
Chairman Publications Committee.

National Adapting Films to Accommodate Filters

National City Laboratories, 22 West Twenty-second street, New York, announces that Filmo cameras similar to Eyemos in shape may be modified to accommodate Wrattan filters in individual holders so that one filter will serve all lenses. The cost for modification and for filter holders is low.

Two of the large newsreel companies already have had all their Eyemos so equipped, another one of them all but one, which will be modified as soon as it may be spared from its station, and two others are arranging to do the same thing.

So far as the adapters are aware, this is the first time Eyemos have been equipped to accommodate gelatin filters between the lens and the film. The initiation of the service was due to the many requests received by the manufacturers during the last decade for these filter adaptations.

Dr. I. S. Hasek with "Yellowstone National Park" won the grand prize in the contest of the Sioux City Amateur Cinema Club and also the first prize in the 16mm. division. The winner in the 8mm. section was H. Hopkinson with "Cutting Ice on Crystal Lake."

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New Bell-Howell Titler Designed for Use with Filmo 8mm. Product

The new Filmo Bell & Howell 8mm. titler consists of a base and camera stand cast of aluminum in one piece and an illumination arm which fastens securely to the camera support and bears two mazda lamps. At the upper end of the camera stand is a special, highly corrected copying lens in the Filmo snap-on-mount, to which the camera is fastened in the usual way after the regular photographic lens has been removed.

The titler lens is accurately prefocused on the title card holder on the base, directly beneath the camera.

Legible Typewritten Titles

The holder takes title cards $3\frac{1}{4}$ by $2\frac{1}{16}$ inches, which size was selected as being the best for reproducing typewritten titles so that they appear entirely legible on the screen. Snapshots, magazine cut-outs, and other suitable backgrounds are readily available in this size.

The illumination arm fits firmly in its socket on the camera stand, and the two lamps and reflectors are permanently fixed in the exact position which eliminates any possible glare from the surface of the title card. It is even possible to use a glossy finished photograph as a



New Bell and Howell titler in operation with a Filmo 8. It may be used for titling, animation work, or to film small still or moving subjects.

background, without recording highlights in the title.

Two sets of lamps are furnished with the titler, providing correct illumination for films of various emulsion speeds. Panchromatic reversal and Type A Kodachrome films call for the 75-watt lamps, while positive film and regular Kodachrome plus the blue filter require the 100-watt lamps.

Animation Stand

Since the newer Filmo 8s are all equipped with the single exposure device, the titler is actually a most efficient miniature animation stand. Animated maps, drawings, cartoons, etc., are all easily made.

The titler can be used in a horizontal position, with the camera resting on its own base, and since the titler lens has the remarkable depth of field of more than one inch, objects of considerable depth may be photographed in sharp focus. Insects, flowers, butterflies, etc., will show up in color as well as in black-and-white, for the versatility of the titler permits enlargement of all kinds of small objects.

A sturdy, visible-action, self-timing device for the Leica camera recently has been introduced by E. Leitz, Inc., manufacturers of the Leica. The spring mechanism that trips the shutter takes from 12 to 15 seconds to unwind.

Mountain Pack Trip with Camera Has Real Appeal

(Continued from Page 295)

and the Moviekon for color movies. Although the latter is very light in weight, it combines most of the features of the heavier 100-foot cameras.

In addition it has a range finder for accurate focusing, an F1.4 lens, and a self timing device for delayed starting. With the self timer it is possible, without waste of footage, to include one's self in the picture.

For mountain photography I recommend Kodachrome film, and I usually order tropical pack or else seal the regular packs with adhesive tape in order to keep out trail dust, of which there is an abundance. I carry an extra meter and, of course, a tripod.

Following this last series of scenic shots in "The Trail Song" there is another group of action pictures centered around mid-day lunch activities. They include a swim, the preparation and eating of a typical trail lunch, and finally the sun bath and rest.

Mountain Moods

For our final series of mountain shots we feature a contrast of the varying moods of the mountains. We compare the cold and defying mood of rugged Mount Lyell and its spectacular glacier with the peaceful and calm moods of other smaller peaks with gentle slopes and pastel shades of color.

The final action series depicts more boys' activities during our three-day camp on the lovely white sand shores of Lake Tenaya.

The quotation "The Rest at the End of the Carry" introduces a humorous shot of one of the burros lying down to recover from a hard day's "carry." The last title, "The Trail Song Is Ended, but the Memories Will Linger On," closes the picture.

The opening and closing titles are superimposed on an action background of the boys and burros walking over a horizon. The entire film is projected with a musical background of records and a description dialogue.

Due to an excess of snow this year, the western mountain country will open rather late. These few suggestions will be published in time to encourage the ambitious cinematographer to plan a delightful vacation trip that will present endless opportunities to photograph a movie that will provide continuing enjoyment.

Captain Hervey Completes Hollywood Study Course

Captain W. W. Hervey of the Signal Corps of the United States Army has left Hollywood to return to Washington after completing a nine months' course of study in motion picture production under the auspices of the Research Council of the Academy of Motion Picture Arts and Sciences. While in Hollywood the Captain spent some time in each department of each studio studying actual production techniques.

Weston Exposure Meter Dial Equipped for High Speeds

The calculator dial on the Weston exposure meter (Model 650) has recently been modernized to show film-speed settings as high as 250 Weston. This increased range of values goes considerably beyond any of the new ultra-speed films now available, or any which are likely to be introduced in the future, it is claimed. As an example, the Weston film speed for the new Agfa ultra-speed film is 64 Weston.

Weston exposure meters with the former dial plate on which 40 Weston is the top film-speed rating can easily be used for the super-speed films simply by shifting the dial a proportionate distance beyond the final value. If desired, however, the original dial can be replaced with one of the newer type by returning the meter to the Weston Electrical Instrument Corporation through your local photo supply dealer.

This change will be made at a charge of \$2 if the meter is returned solely for this purpose, or for 50 cents if it is in conjunction with other repairs on Model 650.

Fremont H. S. Student Body Makes Feature Length Film

AT THE John C. Fremont high school in Los Angeles the drama, photography and art departments have for the past year been producing a feature length 16mm. motion picture, believed to be one of the first of its kind. The entire production is featured with student actors and was completed without any professional assistance.

"Our World," as the film has been titled, is the story of a group of high school students, typical of those found everywhere in the country, who fight, love and reform themselves.

In this hour a boy and girl more or less fall in and out of love, another boy and girl fight and two boys have several very authentic battles over their respective "gal friends."

Embodied in the cinema are also scenes of school campus life photographed at Fremont High.

The picture aims to be different from other educational motion pictures in the fact that it is human, has a lesson, and is yet most entertaining. It was produced by those who know what school life is like—those who live it.

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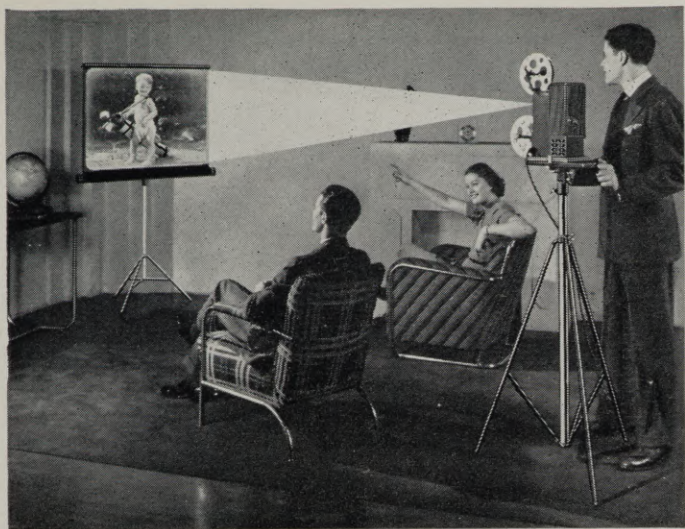
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Home Movie	50
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THE RULES

The contest is world wide and open only to genuine 8mm or 16mm amateurs or amateur clubs.

The contest ends at midnight October 31, 1938. Entries, mailed or expressed, later than that time will not be eligible.

Pictures submitted will be judged for photography, entertainment and/or story value, direction, acting, cutting and composition.

The decision of the judges, among whom there will be prominent cameramen, will be final. Announcement of the awards will be made as soon after the close of the contest as possible and checks sent to the winners.

Pictures may be submitted either by individual amateur movie makers or they may be submitted by amateur movie clubs. Each entrant must have his entry or entries accompanied by a sworn statement, the blank for which will be forwarded to him to fill in.

Contestants may enter as many subjects as they desire. One entry blank will cover all subjects.

The American Cinematographer reserves the right not to declare a prize for any classification if in the opinion of the judges there is not a picture submitted sufficiently good to be classed as a prize-winner.

The American Cinematographer retains the right to make duplicates of such prize-winning pictures as it may indicate, for free distribution to clubs and amateur organizations throughout the world.

If you intend to enter the contest, please send coupon on this page for official entry blank.

NOTICE TO FOREIGN ENTRIES

Films from foreign countries will be admitted to the United States duty free if the pictures are made on American made stock. If this is the case, this fact must be included in the shipment, also the information must be given that it is for non-commercial use. If the film is not made on American made stock duty will have to be prepaid by the sender at the rate of \$1 per hundred feet.

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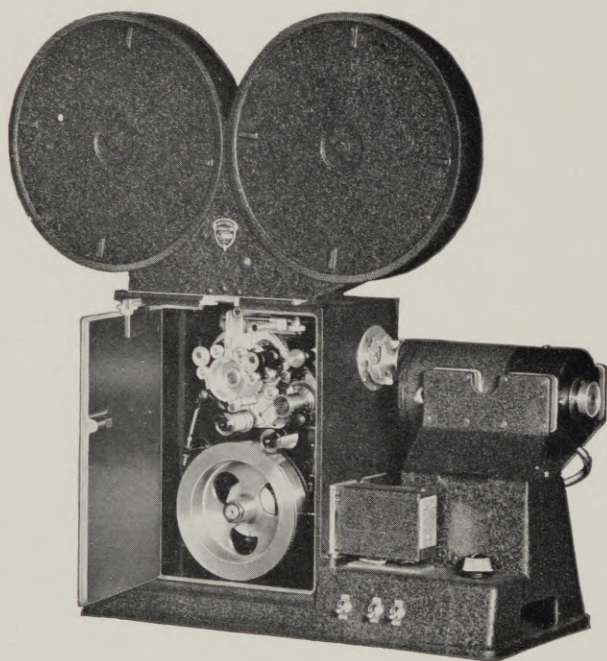
Please send me one of your official entry blanks. I intend to enter a (16mm 8mm) picture in your 1938 contest. I understand my entry must be in your office not later than October 31, 1938.

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